



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at *wvOASIS.gov*. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at *WVPurchasing.gov* with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header 9

List View

- General Information**
- Contact
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Procurement Folder: 1964587

Procurement Type: Central Master Agreement

Vendor ID: VS0000045819

Legal Name: SWIPE RESOURCES LLC

Alias/DBA: HAMZA MASUD

Total Bid: \$1.00

Response Date: 06/04/2026

Response Time: 11:58

Responded By User ID: swiperesources

First Name: Hamza

Last Name: Masud

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SO Doc Code: CRFQ

SO Dept: 0803

SO Doc ID: DOT2600000092

Published Date: 5/18/26

Close Date: 6/4/26

Close Time: 13:30

Status: Closed

Solicitation Description: REFLECTIVE SIGN SHEETING & ASSOCIATED MATERIALS

Total of Header Attachments: 9

Total of All Attachments: 9



Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Sign sheeting material	1.00000	EA	1.000000	1.00

Comm Code	Manufacturer	Specification	Model #
55121734			

**Commodity Line Comments:** See attached pricing sheet

**Extended Description:**

Sign sheeting material

**SECTION I: Type ASTM-I Retroreflective**

<b>Contract Item Number</b>	<b>Estimated Quantity</b>	<b>Item Description</b>	<b>Overage Preferences</b>
1	1	Type ASTM-I Sheeting, 15 inch x 50 yds., White	1/16" min. overage preferred
2	1	Type ASTM-I Sheeting, 15 inch x 50 yds., Yellow	1/16" min. overage preferred
3	1	Type ASTM-I Sheeting, 18-1/2 inch x 50 yds., White	-
4	1	Type ASTM-I Sheeting, 18-1/2 inch x 50 yds., Yellow	-
5	1	Type ASTM-I Sheeting, 21 inch x 50 yds., White	1/16" min. overage preferred
6	1	Type ASTM-I Sheeting, 21 inch x 50 yds., Yellow	1/16" min. overage preferred
7	8	Type ASTM-I Sheeting, 24-1/2 inch x 50 yds., White	-
8	1	Type ASTM-I Sheeting, 24-1/2 inch x 50 yds., Yellow	-

9	46	Type ASTM-I Sheeting, 30-1/2 inch x 50 yds., White	-
10	2	Type ASTM-I Sheeting, 30-1/2 inch x 50 yds., Yellow	-
11	4	Type ASTM-I Sheeting, 36 inch x 50 yds., White	5/16" min. overage preferred
12	1	Type ASTM-I Sheeting, 36 inch x 50 yds., Yellow	5/16" min. overage preferred
13	1	Type ASTM-I Sheeting, 42 inch x 50 yds., White	5/16" min. overage preferred
14	1	Type ASTM-I Sheeting, 42 inch x 50 yds., Yellow	5/16" min. overage preferred
15	5	Type ASTM-I Sheeting, 48 inch x 50 yds., White	7/16" min. overage preferred
16	1	Type ASTM-I Sheeting, 48 inch x 50 yds., Yellow	7/16" min. overage preferred
17	1	Type ASTM-I Sheeting, 1/2 inch x 50 yds., White	-
18	1	Type ASTM-I Sheeting, 1/2 inch x 50 yds., Yellow	-
19	1	Type ASTM-I Sheeting, 1 inch x 50 yds., White	-
20	1	Type ASTM-I Sheeting, 1 inch x 50 yds., Yellow	-

21	1	Type ASTM-I Sheeting, 15 inch x 50 yds., Blue	1/16" min. overage preferred
22	1	Type ASTM-I Sheeting, 18-1/2 inch x 50 yds., Blue	-
23	1	Type ASTM-I Sheeting, 21 inch x 50 yds., Blue	1/16" min. overage preferred
24	2	Type ASTM-I Sheeting, 24-1/2 inch x 50 yds., Blue	-
25	1	Type ASTM-I Sheeting, 30-1/2 inch x 50 yds., Blue	-
26	1	Type ASTM-I Sheeting, 36 inch x 50 yds., Blue	3/16" min. overage preferred
27	1	Type ASTM-I Sheeting, 42 inch x 50 yds., Blue	5/16" min. overage preferred
28	1	Type ASTM-I Sheeting, 48 inch x 50 yds., Blue	7/16" min. overage preferred

**SECTION II: Type ASTM-IV Retroreflectiv**

<b>Contract Item Number</b>	<b>Estimated Quantity</b>	<b>Item Description</b>	<b>Overage Preferences</b>
29	1	Type ASTM-IV Sheeting, 1/2 inch x 50 yds., White	-

30	1	Type ASTM-IV Sheeting, 1/2 inch x 50 yds., Yellow	-
31	1	Type ASTM-IV Sheeting, 1 inch x 50 yds., White	-
32	1	Type ASTM-IV Sheeting, 1 inch x 50 yds., Yellow	-
33	1	Type ASTM-IV Sheeting, 12-3/4 inch x 100 yds., White	-
34	1	Type ASTM-IV Sheeting, 12-3/4 inch x 100 yds., Yellow	-
35	22	Type ASTM-IV Sheeting, 12-3/4 inch x 100 yds., Blue	-
36	17	Type ASTM-IV Sheeting, 12-3/4 inch x 100 yds., Green	-
37	1	Type ASTM-IV Sheeting, 12-3/4 inch x 100 yds., Brown	-
38	1	Type ASTM-IV Sheeting, 15 inch x 50 yds., White	1/16" min. overage preferred
39	1	Type ASTM-IV Sheeting, 15 inch x 50 yds., Yellow	1/16" min. overage preferred
40	1	Type ASTM-IV Sheeting, 15 inch x 50 yds., Blue	1/16" min. overage preferred
41	1	Type ASTM-IV Sheeting, 15 inch x 50 yds., Green	1/16" min. overage preferred

42	1	Type ASTM-IV Sheeting, 15 inch x 50 yds., Brown	1/16" min. overage preferred
43	13	Type ASTM-IV Sheeting, 18-1/2 inch x 50 yds., White	-
44	1	Type ASTM-IV Sheeting, 18-1/2 inch x 50 yds., Yellow	-
45	1	Type ASTM-IV Sheeting, 18-1/2 inch x 50 yds., Blue	-
46	1	Type ASTM-IV Sheeting, 18-1/2 inch x 50 yds., Green	-
47	1	Type ASTM-IV Sheeting, 18-1/2 inch x 50 yds., Brown	-
48	1	Type ASTM-IV Sheeting, 21 inch x 50 yds., White	1/16" min. overage preferred
49	1	Type ASTM-IV Sheeting, 21 inch x 50 yds., Yellow	1/16" min. overage preferred
50	1	Type ASTM-IV Sheeting, 21 inch x 50 yds., Blue	1/16" min. overage preferred
51	1	Type ASTM-IV Sheeting, 21 inch x 50 yds., Green	1/16" min. overage preferred
52	1	Type ASTM-IV Sheeting, 21 inch x 50 yds., Brown	1/16" min. overage preferred
53	27	Type ASTM-IV Sheeting, 24-1/2 inch x 50 yds., White	-

54	11	Type ASTM-IV Sheeting, 24-1/2 inch x 50 yds., Yellow	-
55	1	Type ASTM-IV Sheeting, 24-1/2 inch x 50 yds., Blue	-
56	1	Type ASTM-IV Sheeting, 24-1/2 inch x 50 yds., Green	-
57	1	Type ASTM-IV Sheeting, 24-1/2 inch x 50 yds., Brown	-
58	1	Type ASTM-IV Sheeting, 24-1/2 inch x 50 yds., Red	-
59	73	Type ASTM-IV Sheeting, 30-1/2 inch x 50 yds., White	-
60	49	Type ASTM-IV Sheeting, 30-1/2 inch x 50 yds., Yellow	-
61	1	Type ASTM-IV Sheeting, 30-1/2 inch x 50 yds., Blue	-
62	1	Type ASTM-IV Sheeting, 30-1/2 inch x 50 yds., Green	-
63	1	Type ASTM-IV Sheeting, 30-1/2 inch x 50 yds., Brown	-
64	16	Type ASTM-IV Sheeting, 36 inch x 50 yds., White	3/16" min. overage preferred
65	20	Type ASTM-IV Sheeting, 36 inch x 50 yds., Yellow	3/16" min. overage preferred

66	1	Type ASTM-IV Sheeting, 36 inch x 50 yds., Blue	3/16" min. overage preferred
67	1	Type ASTM-IV Sheeting, 36 inch x 50 yds., Green	3/16" min. overage preferred
68	1	Type ASTM-IV Sheeting, 36 inch x 50 yds., Brown	3/16" min. overage preferred
69	14	Type ASTM-IV Sheeting, 42 inch x 50 yds., White	5/16" min. overage preferred
70	1	Type ASTM-IV Sheeting, 42 inch x 50 yds., Yellow	5/16" min. overage preferred
71	1	Type ASTM-IV Sheeting, 42 inch x 50 yds., Blue	5/16" min. overage preferred
72	1	Type ASTM-IV Sheeting, 42 inch x 50 yds., Green	5/16" min. overage preferred
73	1	Type ASTM-IV Sheeting, 42 inch x 50 yds., Brown	5/16" min. overage preferred
74	15	Type ASTM-IV Sheeting, 48 inch x 50 yds., White	7/16" min. overage preferred
75	6	Type ASTM-IV Sheeting, 48 inch x 50 yds., Yellow	7/16" min. overage preferred
76	1	Type ASTM-IV Sheeting, 48 inch x 50 yds., Blue	7/16" min. overage preferred
77	1	Type ASTM-IV Sheeting, 48 inch x 50 yds., Green	7/16" min. overage preferred

78	1	Type ASTM-IV Sheeting, 48 inch x 50 yds., Brown	7/16" min. overage preferred
<b>SECTION III : Type ASTM-XI Retroreflecti</b>			
<b>Contract Item Number</b>	<b>Estimated Quantity</b>	<b>Item Description</b>	<b>Overage Preferences</b>
79	1	Type ASTM-XI Sheeting, 9 inch x 100 yds., Fluorescent Yellow Green	-
80	1	Type ASTM-XI Sheeting, 12 inch x 100 yds., White	-
81	1	Type ASTM-XI Sheeting, 12 inch x 100 yds., Fluorescent Yellow	-
82	10	Type ASTM-XI Sheeting, 12-3/4 inch x 100 yds., White	-
83	20	Type ASTM-XI Sheeting, 12-3/4 inch x 100 yds., Blue	-
84	20	Type ASTM-XI Sheeting, 12-3/4 inch x 100 yds., Green	-
85	1	Type ASTM-XI Sheeting, 12-3/4 inch x 100 yds., Fluorescent Orange	-
86	1	Type ASTM-XI Sheeting, 12-3/4 inch x 100 yds., Fluorescent Yellow	-

87	1	Type ASTM-XI Sheeting, 12-3/4 inch x 100 yds., Fluorescent Yellow Green	-
88	1	Type ASTM-XI Sheeting, 15 inch x 50 yds., White	1/16" min. overage preferred
89	1	Type ASTM-XI Sheeting, 15 inch x 50 yds., Blue	1/16" min. overage preferred
90	1	Type ASTM-XI Sheeting, 15 inch x 50 yds., Green	1/16" min. overage preferred
91	1	Type ASTM-XI Sheeting, 15 inch x 50 yds., Fluorescent Orange	1/16" min. overage preferred
92	1	Type ASTM-XI Sheeting, 15 inch x 50 yds., Fluorescent Yellow	1/16" min. overage preferred
93	1	Type ASTM-XI Sheeting, 15 inch x 50 yds., Fluorescent Yellow Green	1/16" min. overage preferred
94	1	Type ASTM-XI Sheeting, 18-1/2 inch x 50 yds., White	-
95	1	Type ASTM-XI Sheeting, 18-1/2 inch x 50 yds., Blue	-
96	1	Type ASTM-XI Sheeting, 18-1/2 inch x 50 yds., Green	-
97	4	Type ASTM-XI Sheeting, 18-1/2 inch x 50 yds., Fluorescent Orange	-

98	1	Type ASTM-XI Sheeting, 18-1/2 inch x 50 yds., Fluorescent Yellow	-
99	1	Type ASTM-XI Sheeting, 18-1/2 inch x 50 yds., Fluorescent Yellow Green	-
100	1	Type ASTM-XI Sheeting, 21 inch x 50 yds., White	1/16" min. overage preferred
101	1	Type ASTM-XI Sheeting, 21 inch x 50 yds., Blue	1/16" min. overage preferred
102	1	Type ASTM-XI Sheeting, 21 inch x 50 yds., Green	1/16" min. overage preferred
103	1	Type ASTM-XI Sheeting, 21 inch x 50 yds., Fluorescent Orange	1/16" min. overage preferred
104	1	Type ASTM-XI Sheeting, 21 inch x 50 yds., Fluorescent Yellow	1/16" min. overage preferred
105	1	Type ASTM-XI Sheeting, 21 inch x 50 yds., Fluorescent Yellow Green	1/16" min. overage preferred
106	1	Type ASTM-XI Sheeting, 24-1/2 inch x 50 yds., White	-
107	1	Type ASTM-XI Sheeting, 24-1/2 inch x 50 yds., Blue	-
108	1	Type ASTM-XI Sheeting, 24-1/2 inch x 50 yds., Green	-
109	4	Type ASTM-XI Sheeting, 24-1/2 inch x 50 yds., Fluorescent Orange	-

110	14	Type ASTM-XI Sheeting, 24-1/2 inch x 50 yds., Fluorescent Yellow	-
111	1	Type ASTM-XI Sheeting, 24-1/2 inch x 50 yds., Fluorescent Yellow Green	-
112	1	Type ASTM-XI Sheeting, 30-1/2 inch x 50 yds., White	-
113	1	Type ASTM-XI Sheeting, 30-1/2 inch x 50 yds., Blue	-
114	1	Type ASTM-XI Sheeting, 30-1/2 inch x 50 yds., Green	-
115	2	Type ASTM-XI Sheeting, 30-1/2 inch x 50 yds., Fluorescent Orange	-
116	6	Type ASTM-XI Sheeting, 30-1/2 inch x 50 yds., Fluorescent Yellow	-
117	7	Type ASTM-XI Sheeting, 30-1/2 inch x 50 yds., Fluorescent Yellow Green	-
118	1	Type ASTM-XI Sheeting, 36 inch x 50 yds., White	3/16" min. overage preferred
119	1	Type ASTM-XI Sheeting, 36 inch x 50 yds., Blue	5/16" min. overage preferred
120	1	Type ASTM-XI Sheeting, 36 inch x 50 yds., Green	5/16" min. overage preferred
121	2	Type ASTM-XI Sheeting, 36 inch x 50 yds., Fluorescent Orange	3/16" min. overage preferred

122	22	Type ASTM-XI Sheeting, 36 inch x 50 yds., Fluorescent Yellow	5/16" min. overage preferred
123	1	Type ASTM-XI Sheeting, 36 inch x 50 yds., Fluorescent Yellow Green	5/16" min. overage preferred
124	1	Type ASTM-XI Sheeting, 42 inch x 50 yds., White	5/16" min. overage preferred
125	1	Type ASTM-XI Sheeting, 42 inch x 50 yds., Blue	5/16" min. overage preferred
126	1	Type ASTM-XI Sheeting, 42 inch x 50 yds., Green	5/16" min. overage preferred
127	1	Type ASTM-XI Sheeting, 42 inch x 50 yds., Fluorescent Orange	5/16" min. overage preferred
128	1	Type ASTM-XI Sheeting, 42 inch x 50 yds., Fluorescent Yellow	5/16" min. overage preferred
129	1	Type ASTM-XI Sheeting, 42 inch x 50 yds., Fluorescent Yellow Green	5/16" min. overage preferred
130	11	Type ASTM-XI Sheeting, 48 inch x 50 yds., White	7/16" min. overage preferred
131	2	Type ASTM-XI Sheeting, 48 inch x 50 yds., Blue	7/16" min. overage preferred
132	2	Type ASTM-XI Sheeting, 48 inch x 50 yds., Green	7/16" min. overage preferred
133	25	Type ASTM-XI Sheeting, 48 inch x 50 yds., Fluorescent Orange	7/16" min. overage preferred

134	8	Type ASTM-XI Sheeting, 48 inch x 50 yds., Fluorescent Yellow	7/16" min. overage preferred
135	11	Type ASTM-XI Sheeting, 48 inch x 50 yds., Fluorescent Yellow Green	7/16" min. overage preferred
<b>SECTION IV : Type ASTM-I, ASTM-IV, and Type ASTM-XI Retrorefle</b>			
<b>Contract Item Number</b>	<b>Estimated Quantity</b>	<b>Item Description</b>	<b>Overage Preferences</b>
136	1	Transparent film, Acrylic, 12 inch x 50 yds., Yellow	NA
137	1	Transparent film, Acrylic, 12 inch x 50 yds., Red	NA
138	1	Transparent film, Acrylic, 12 inch x 50 yds., Blue	NA

139	1	Transparent film, Acrylic, 12 inch x 50 yds., Green	NA
140	1	Transparent film, Acrylic, 12 inch x 50 yds., Brown	NA
141	1	Transparent film, Acrylic, 15 inch x 50 yds., Yellow	NA
142	1	Transparent film, Acrylic, 15 inch x 50 yds., Red	NA
143	1	Transparent film, Acrylic, 15 inch x 50 yds., Blue	NA

144	1	Transparent film, Acrylic, 15 inch x 50 yds., Green	NA
145	1	Transparent film, Acrylic, 15 inch x 50 yds., Brown	NA
146	1	Transparent film, Acrylic, 18 inch x 50 yds., Yellow	NA
147	1	Transparent film, Acrylic, 18 inch x 50 yds., Red	NA
148	1	Transparent film, Acrylic, 18 inch x 50 yds., Blue	NA

149	1	Transparent film, Acrylic, 18 inch x 50 yds., Green	NA
150	1	Transparent film, Acrylic, 18 inch x 50 yds., Brown	NA
151	1	Transparent film, Acrylic, 24 inch x 50 yds., Yellow	NA
152	1	Transparent film, Acrylic, 24 inch x 50 yds., Red	NA
153	1	Transparent film, Acrylic, 24 inch x 50 yds., Blue	NA

154	11	Transparent film, Acrylic, 24 inch x 50 yds., Green	NA
155	1	Transparent film, Acrylic, 24 inch x 50 yds., Brown	NA
156	1	Transparent film, Acrylic, 30 inch x 50 yds., Yellow	NA
157	1	Transparent film, Acrylic, 30 inch x 50 yds., Red	NA
158	1	Transparent film, Acrylic, 30 inch x 50 yds., Blue	NA
159	29	Transparent film, Acrylic, 30 inch x 50 yds., Green	NA
160	1	Transparent film, Acrylic, 30 inch x 50 yds., Brown	NA
161	1	Transparent film, Acrylic, 36 inch x 50 yds., Yellow	NA
162	1	Transparent film, Acrylic, 36 inch x 50 yds., Red	NA
163	1	Transparent film, Acrylic, 36 inch x 50 yds., Blue	NA

164	7	Transparent film, Acrylic, 36 inch x 50 yds., Green	NA
165	1	Transparent film, Acrylic, 36 inch x 50 yds., Brown	NA
166	1	Transparent film, Acrylic, 42 inch x 50 yds., Yellow	NA
167	1	Transparent film, Acrylic, 42 inch x 50 yds., Red	NA
168	1	Transparent film, Acrylic, 42 inch x 50 yds., Blue	NA
169	1	Transparent film, Acrylic, 42 inch x 50 yds., Green	NA
170	1	Transparent film, Acrylic, 42 inch x 50 yds., Brown	NA
171	1	Transparent film, Acrylic, 48 inch x 50 yds., Yellow	NA
172	10	Transparent film, Acrylic, 48 inch x 50 yds., Red	NA
173	11	Transparent film, Acrylic, 48 inch x 50 yds., Blue	NA
174	10	Transparent film, Acrylic, 48 inch x 50 yds., Green	NA
175	2	Transparent film, Acrylic, 48 inch x 50 yds., Brown	NA

176	1	Opaque film, Vinyl, 3/8 inch x 50 yds., Black	NA
177	1	Opaque film, Vinyl, 5/8 inch x 50 yds., Black	NA
178	1	Opaque film, Vinyl, 3/4 inch x 50 yds., Black	NA
179	1	Opaque film, Vinyl, 7/8 inch x 50 yds., Black	NA
180	100	Opaque film, Vinyl, 1-1/4 inch x 50 yds., Black	NA
181	1	Opaque film, Vinyl, 18 inch x 50 yds., Matte White	NA
182	1	Opaque film, Vinyl, 18 inch x 50 yds., Black	NA
183	1	Opaque film, Vinyl, 18 inch x 50 yds., Yellow	NA
184	1	Opaque film, Vinyl, 18 inch x 50 yds., Blue	NA
185	1	Opaque film, Vinyl, 24 inch x 50 yds., Matte White	NA
186	1	Opaque film, Vinyl, 24 inch x 50 yds., Black	NA
187	1	Opaque film, Vinyl, 24 inch x 50 yds., Yellow	NA

188	1	Opaque film, Vinyl, 24 inch x 50 yds., Blue	NA
189	1	Opaque film, Vinyl, 30 inch x 50 yds., Matte White	NA
190	4	Opaque film, Vinyl, 30 inch x 50 yds., Black	NA
191	1	Opaque film, Vinyl, 30 inch x 50 yds., Yellow	NA
192	1	Opaque film, Vinyl, 30 inch x 50 yds., Blue	NA
193	1	Opaque film, Vinyl, 36 inch x 50 yds., Matte White	NA
194	4	Opaque film, Vinyl, 36 inch x 50 yds., Black	NA
195	1	Opaque film, Vinyl, 36 inch x 50 yds., Yellow	NA
196	1	Opaque film, Vinyl, 36 inch x 50 yds., Blue	NA
197	1	Opaque film, Vinyl, 48 inch x 50 yds., Matte White	NA
198	29	Opaque film, Vinyl, 48 inch x 50 yds., Black	NA
199	1	Opaque film, Vinyl, 48 inch x 50 yds., Yellow	NA

200	1	Opaque film, Vinyl, 48 inch x 50 yds., Blue	NA
201	1	Opaque film, Vinyl, 60 inch x 50 yds., Matte White	NA
202	1	Opaque film, Vinyl, 60 inch x 50 yds., Black	NA
203	1	Opaque film, Vinyl, 60 inch x 50 yds., Yellow	NA
204	1	Opaque film, Vinyl, 60 inch x 50 yds., Blue	NA
<b>TOTAL</b>			

Sheeting

Manufacturer Product Code	Unit Cost	Extended Total Amount (Qty x Unit Cost)	Notes from Swipe Resources LLC
3M 7310	\$553.94	\$ 553.94	Priced and Cut from a 24in
3m 7311	\$553.94	\$ 553.94	Priced and Cut from a 24in
3m 7310	\$553.94	\$ 553.94	Priced and Cut from a 24in
3M 7311	\$553.94	\$ 553.94	Priced and Cut from a 24in
3M 7310	\$553.94	\$ 553.94	Priced and Cut from a 24in
3M 7311	\$553.94	\$ 553.94	Priced and Cut from a 24in
3M 7310	\$553.94	\$ 4,431.48	Priced and Cut from a 24in
3M 7311	\$553.94	\$ 553.94	Priced and Cut from a 24in

3M 7310	\$830.90	\$ 38,221.17	CUT FROM A 36IN ROLL- 30" ROLL WOULD BE \$461.61
3M 7311	\$830.90	\$ 1,661.79	CUT FROM A 36IN ROLL- 30" ROLL WOULD BE \$461.61
3M 7310	\$830.90	\$ 3,323.58	CUT FROM A 36IN ROLL-No overage
3m 7311	\$830.90	\$ 830.90	CUT FROM A 36IN ROLL-No overage
3M 7310	\$1,107.87	\$ 1,107.87	Cut from a 48in Roll
3M7311	\$1,107.87	\$ 1,107.87	Cut from a 48in Roll
3M 7310	\$1,107.87	\$ 5,539.35	Cut from a 48in Roll
3M 7311	\$1,107.87	\$ 1,107.87	Cut from a 48in Roll
3M 7310	\$33.00	\$ 33.00	MUST BE ORDERED WITH ANOTHER FULL ROLL
3M 7311	\$33.00	\$ 33.00	
3M 7310	\$33.00	\$ 22.00	
3M 7311	\$33.00	\$ 33.00	
3M 7311	\$33.00	\$ 33.00	

3M 3935	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3935	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3935	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3935	\$930.00	\$ 1,860.00	cut from a 30" roll
3M 3935	\$1,116.18	\$ 1,116.18	cut from a 36" Roll
3M 3935	\$1,116.18	\$ 1,116.18	No Overage
3M 3935	\$1,488.00	\$ 1,488.00	Cut from a 48" roll
3M 3935	\$1,488.00	\$ 1,488.00	*** No ASTM I in Blue is available in the Non- metalized Mircro Prismatic - the 3935 is the next level up
<b>re Sheeting</b>			
<b>Manufacturer Product Code</b>	<b>Unit Cost</b>	<b>Extended Total Amount (Qty x Unit Cost)</b>	
3M 3930	\$38.75	\$ 38.75	

3M 3931	\$38.75	\$ 38.75	
3M 3930	\$38.75	\$ 38.75	
3M 3931	\$38.75	\$ 38.75	
3M 3930	\$806.13	\$ 806.13	Not available in this size - Quote based on 2-12 3/4" x50yd rolls
3M 3931	\$806.13	\$ 806.13	Not available in this size - Quote based on 2-12 3/4" x50yd rolls
3M 3935	\$958.16	\$ 21,079.41	Made to order- 6 roll MOQ
3M 3937	\$958.16	\$ 16,288.64	Made to order - 1 roll MOQ
3M 3939	\$958.16	\$ 958.16	Made to order - 1 roll MOQ
3M 3931	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3931	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3935	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3937	\$744.00	\$ 744.00	Cut from a 24" roll

3M 3939	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3930	\$744.00	\$ 9,672.00	Cut from a 24" roll
3M 3931	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3935	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3937	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3939	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3930	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3931	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3935	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3937	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3939	\$744.00	\$ 744.00	Cut from a 24" roll
3M 3930	\$930.00	\$ 25,110.00	Cut from a 30" roll

3M 3931	\$930.00	\$ 10,230.00	Cut from a 30" roll
3M 3935	\$930.00	\$ 930.00	Cut from a 30" roll
3M 3937	\$930.00	\$ 930.00	Cut from a 30" roll
3M 3939	\$930.00	\$ 930.00	Cut from a 30" roll
3m 3932	\$930.00	\$ 930.00	Cut from a 30" roll
3M 3930	\$1,116.18	\$ 81,481.14	cut from a 36" Roll
3M 3931	\$1,116.18	\$ 54,692.82	cut from a 36" Roll
3M 3935	\$1,116.18	\$ 1,116.18	cut from a 36" Roll
3M 3937	\$1,116.18	\$ 1,116.18	cut from a 36" Roll
3M 3939	\$1,116.18	\$ 1,116.18	cut from a 36" Roll
3M 3930	\$1,116.18	\$ 17,858.88	No Overage
3M 3931	\$1,116.18	\$ 22,323.60	No Overage

3M 3935	\$1,116.18	\$ 1,116.18	No Overage
3M 3937	\$1,116.18	\$ 1,116.18	No Overage
3M 3939	\$1,116.18	\$ 1,116.18	No Overage
3M 3930	\$1,488.00	\$ 20,832.00	Cut from a 48" roll
3M 3931	\$1,488.00	\$ 1,488.00	Cut from a 48" roll
3M 3935	\$1,488.00	\$ 1,488.00	Cut from a 48" roll
3M 3937	\$1,488.00	\$ 1,488.00	Cut from a 48" roll
3M 3939	\$1,488.00	\$ 1,488.00	Cut from a 48" roll
3M 3930	\$1,488.00	\$ 22,320.00	
3M 3931	\$1,488.00	\$ 8,928.00	
3M 3935	\$1,488.00	\$ 1,488.00	
3M 3937	\$1,488.00	\$ 1,488.00	

3M 3939	\$1,488.00	\$ 1,488.00	
<b>ve Sheeting</b>			
<b>Manufacturer Product Code</b>	<b>Unit Cost</b>	<b>Extended Total Amount (Qty x Unit Cost)</b>	
3M 4083	\$1,590.00	\$ 1,590.00	9"x100yd is not available - Quote is for 2 rolls of 9"x50yd - We stock this Item
3M 4090UDS	\$2,200.86	\$ 2,200.86	Made to order - 1 roll MOQ True size 11.9687"x100yd
3M 4081	\$2,435.30	\$ 2,435.30	Made to order - 1 roll MOQ Cut from a 12 3/4"x100yd roll
3M 4090	\$2,344.53	\$ 23,445.30	Made to order - 6 roll MOQ 10 day lead
3M 4095	\$2,344.53	\$ 46,890.60	Made to order - 6 roll MOQ 10 day lead
3M 4097	\$2,344.53	\$ 46,890.60	Made to order - 1 roll MOQ 10 day lead
3M 4084	\$2,865.05	\$ 2,865.05	12-3/4"x100yd is not available - quote is for 2 rolls of 12-3/4"x50yd cut from a 30" roll
3M 4081	\$2,435.30	\$ 2,435.30	Made to order - 1 roll MOQ 10 day lead

3M 4083	\$2,865.05	\$ 2,865.05	12-3/4"x100yd is not available - quote is for 2 rolls of 12-3/4"x50yd cut from a 30" roll	Certain an 18' have
3M 4090	\$1,407.24	\$ 1,407.24	Cut from an 18"roll	
3M 4095	\$1,876.20	\$ 1,876.20	Cut from a 24" roll	
3M 4097	\$1,876.20	\$ 1,876.20	Cut from a 24" roll	
3M 4084	\$1,908.00	\$ 1,908.00	Cut from a 24" roll	
3M 4081	\$1,431.00	\$ 1,431.00	Cut from an 18"roll	
3M 4083	\$1,908.00	\$ 1,908.00	Cut from a 24" roll	
3M 4090	\$1,876.20	\$ 1,876.20	Cut from a 24" roll	
3M 4095	\$1,876.20	\$ 1,876.20	Cut from a 24" roll	
3M 4097	\$1,876.20	\$ 1,876.20	Cut from a 24" roll	
3M 4084	\$1,908.00	\$ 7,632.00	Cut from a 24" roll	

3M 4081	\$1,908.00	\$ 1,908.00	Cut from a 24" roll
3M 4083	\$1,908.00	\$ 1,908.00	Cut from a 24" roll
3M 4090	\$1,876.20	\$ 1,876.20	Cut from a 24" roll
3M 4095	\$1,876.20	\$ 1,876.20	Cut from a 24" roll
3M 4097	\$1,876.20	\$ 1,876.20	Cut from a 24" roll
3M 4084	\$1,908.00	\$ 1,908.00	Cut from a 24" roll
3M 4081	\$1,908.00	\$ 1,908.00	Cut from a 24" roll
3M 4083	\$1,908.00	\$ 1,908.00	Cut from a 24" roll
3M 4090	\$2,345.25	\$ 2,345.25	Cut from a 30" roll
3M 4095	\$2,345.25	\$ 2,345.25	Cut from a 30" roll
3M 4097	\$2,345.25	\$ 2,345.25	Cut from a 30" roll
3M 4084	\$2,385.00	\$ 9,540.00	Cut from a 30" roll

3M 4081	\$2,385.00	\$ 33,390.00	Cut from a 30" roll
3M 4083	\$2,385.00	\$ 2,385.00	Cut from a 30" roll
3M 4090	\$2,814.48	\$ 2,814.48	Cut from a 36" roll
3M 4095	\$2,814.48	\$ 2,814.48	Cut from a 36" roll
3M 4097	\$2,814.48	\$ 2,814.48	Cut from a 36" roll
3M 4084	\$2,862.00	\$ 5,724.00	Cut from a 36" roll
3M 4081	\$2,862.00	\$ 17,172.00	Cut from a 36" roll
3M 4083	\$2,862.00	\$ 20,034.00	Cut from a 36" roll
3M 4090	\$2,814.48	\$ 2,814.48	36" roll
3M 4095	\$2,814.48	\$ 2,814.48	36" roll
3M 4097	\$2,814.48	\$ 2,814.48	36" roll
3M 4084	\$2,862.00	\$ 5,724.00	36" roll

3M 4081	\$2,862.00	\$ 62,964.00	36" roll
3M 4083	\$2,862.00	\$ 2,862.00	36" roll
3M 4090	\$3,752.40	\$ 3,752.40	Cut from 48" roll
3M 4095	\$3,752.40	\$ 3,752.40	Cut from 48" roll
3M 4097	\$3,752.40	\$ 3,752.40	Cut from 48" roll
3M 4084	\$3,816.00	\$ 3,816.00	Cut from 48" roll
3M 4081	\$3,816.00	\$ 3,816.00	Cut from 48" roll
3M 4083	\$3,816.00	\$ 3,816.00	Cut from 48" roll
3M 4090	\$3,752.40	\$ 41,276.40	48" roll
3M 4095	\$3,752.40	\$ 7,504.80	48" roll
3M 4097	\$3,752.40	\$ 7,504.80	48" roll
3M 4084	\$3,816.00	\$ 95,400.00	48" roll

3M 4081	\$3,816.00	\$ 30,528.00	48" roll
3M 4083	\$3,816.00	\$ 41,976.00	48" roll
<b>Active Sheeting Matched Components</b>			
<b>Manufacturer Product Code</b>	<b>Unit Cost</b>	<b>Extended Total Amount (Qty x Unit Cost)</b>	
3M 1171	\$330.77	\$ 330.77	<b>Made to order - 12 roll MOQ Price based on 12"x50yd made at plant 48" is only roll size with 1 roll MOQ -10 day lead</b>
3M 1172	\$330.77	\$ 330.77	<b>Made to order - 12 roll MOQ Price based on 12"x50yd made at plant 48" is only roll size with 1 roll MOQ -10 day lead</b>
3M 1175	\$330.77	\$ 330.77	<b>Made to order - 12 roll MOQ Price based on 12"x50yd made at plant 48" is only roll size with 1 roll MOQ -10 day lead</b>

3M 1177	\$330.77	\$ 330.77	<b>Made to order - 12 roll MOQ Price based on 12"x50yd made at plant 48" is only roll size with 1 roll MOQ -10 day lead</b>
3M 1179	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ Cut from 24In- Price based on 24" roll - Not available in 12"rolls</b>
3M 1171	\$661.53	\$ 661.53	<b>Made to order -6 roll MOQ Cut from 24In- Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>
3M 1172	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ Cut from 24In- Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>
3M 1175	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ Cut from 24In- Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>

3M 1177	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ Cut from 24In- Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>
3M 1179	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ Cut from 24In- Price based on 24" roll - Not available in 12"rolls</b>
3M 1171	\$661.53	\$ 661.53	<b>Made to order -6 roll MOQ Cut from 24In- Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>
3M 1172	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ Cut from 24In- Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>
3M 1175	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ Cut from 24In- Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>

3M 1177	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ Cut from 24In- Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>
3M 1179	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ Cut from 24In- Price based on 24" roll - Not available in 12"rolls</b>
3M 1171	\$661.53	\$ 661.53	<b>Made to order -6 roll MOQ 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>
3M 1172	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ - Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>
3M 1175	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ Cut from 24In- Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>

3M 1177	\$661.53	\$ 7,276.83	<b>Made to order -1 roll MOQ - Price based on 24" roll - 48 " roll is only roll size with 1 roll MOQ - 10 day lead</b>
3M 1179	\$661.53	\$ 661.53	<b>Made to order -1 roll MOQ - Price based on 24" roll - Not available in 12"rolls</b>
3M 1171	\$826.92	\$ 826.92	<b>Made to order - 5 roll MOQ - 10 day lead</b>
3M 1172	\$826.92	\$ 826.92	Made to order 1 roll MOQ 10 day lead
3M 1175	\$826.92	\$ 826.92	Made to order 1 roll MOQ 10 day lead
3M 1177	\$826.92	\$ 23,980.68	Made to order 1 roll MOQ 10 day lead
3M 1179	\$826.92	\$ 826.92	Made to order 1 roll MOQ 10 day lead
3M 1171	\$992.30	\$ 992.30	<b>Made to order - 4 roll MOQ - 10 day lead</b>
3M 1172	\$992.30	\$ 992.30	Made to order 1 roll MOQ 10 day lead
3M 1175	\$992.30	\$ 992.30	Made to order 1 roll MOQ 10 day lead

3M 1177	\$992.30	\$ 6,946.07	Made to order 1 roll MOQ 10 day lead
3M 1179	\$992.30	\$ 992.30	Made to order 1 roll MOQ 10 day lead
3M 1171	\$1,323.06	\$ 1,323.06	<b>Made to order - Cut from 48" roll 1 roll MOQ - 10 day lead</b>
3M 1172	\$1,323.06	\$ 1,323.06	<b>Made to order - Cut from 48" roll 1 roll MOQ - 10 day lead</b>
3M 1175	\$1,323.06	\$ 1,323.06	<b>Made to order - Cut from 48" roll 1 roll MOQ - 10 day lead</b>
3M 1177	\$1,323.06	\$ 1,323.06	<b>Made to order - Cut from 48" roll 1 roll MOQ - 10 day lead</b>
3M 1179	\$1,323.06	\$ 1,323.06	<b>Made to order - Cut from 48" roll 1 roll MOQ - 10 day lead</b>
3M 1171	\$1,323.06	\$ 1,323.06	Made to order 1 roll MOQ 10 day lead
3M 1172	\$1,323.06	\$ 13,230.60	Made to order 1 roll MOQ 10 day lead
3M 1175	\$1,323.06	\$ 14,553.66	Made to order 1 roll MOQ 10 day lead
3M 1177	\$1,323.06	\$ 13,230.60	Made to order 1 roll MOQ 10 day lead
3M 1179	\$1,323.06	\$ 2,646.12	Made to order 1 roll MOQ 10 day lead

ASP Black Cast Premium Striping	\$23.63	\$ 23.63	
ASP Black Cast Premium Striping	\$23.63	\$ 23.63	
ASP Black Cast Premium Striping	\$23.63	\$ 23.63	
ASP Black Cast Premium Striping	\$23.63	\$ 23.63	
ASP Black Cast Premium Striping	\$24.38	\$ 2,437.50	
Lumina 2100-051	\$365.25	\$ 365.25	
Lumina 2100-003	\$379.44	\$ 379.44	
Lumina 2100-307	\$423.38	\$ 423.38	Buyer to Choose Specific Color
Lumina 2100-304	\$439.77	\$ 439.77	Buyer to Choose Specific Color
Lumina 2100-051 Cast	\$452.93	\$ 452.93	
Lumina 2100-003	\$470.51	\$ 470.51	
Lumina 2100-307	\$452.93	\$ 452.93	

Lumina 2100-304	\$545.31	\$ 545.31	
Lumina 2100-051 Cast	\$601.88	\$ 601.88	
Lumina 2100-003	\$625.02	\$ 2,500.08	
Lumina 2100-307	\$662.13	\$ 662.13	Buyer to Choose Specific Color
Lumina 2100-304	\$685.85	\$ 685.85	Buyer to Choose Specific Color
Lumina 2100-051 Cast	\$952.95	\$ 952.95	
Lumina 2100-003	\$989.97	\$ 3,959.88	
Lumina 2100-307	\$1,086.72	\$ 1,086.72	Buyer to Choose Specific Color
Lumina 2100-304	\$1,128.93	\$ 1,128.93	Buyer to Choose Specific Color
Lumina 2100-051 Cast	\$913.67	\$ 913.67	
Lumina 2100-003	\$949.17	\$ 27,525.93	
Lumina 2100-307	\$1,041.90	\$ 1,041.90	Buyer to Choose Specific Color

Lumina 2100-304	\$1,082.37	\$ 1,082.37	Buyer to Choose Specific Color
Lumina 2100-051 Cast	NO BID	NO BID	Not available in this size
Lumina 2100-003	\$1,186.05	\$ 1,186.05	
Lumina 2100-307	NO BID	NO BID	Not available in this size
Lumina 2100-304	NO BID	NO BID	Not available in this size
		<b>\$ 1,174,204.06</b>	

















n rolls are available in  
". If not available, we  
to cut from a 24" roll



























Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**State of West Virginia  
 Centralized Request for Quote  
 Highways**

**Proc Folder:** 1964587  
**Doc Description:** REFLECTIVE SIGN SHEETING & ASSOCIATED MATERIALS  
**Reason for Modification:**  
**Proc Type:** Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2026-05-18	2026-06-04 13:30	CRFQ 0803 DOT2600000092	1

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

**Vendor Customer Code:**  
**Vendor Name :** Swipe Resources LLC  
**Address :** 7491 Flag Point Ct.  
**Street :**  
**City :** Manassas  
**State :** VA **Country :** USA **Zip :** 20109  
**Principal Contact :** Hamza Masud  
**Vendor Contact Phone:** (703) 870-6182 **Extension:**

**FOR INFORMATION CONTACT THE BUYER**

John W Estep  
 304-558-2566  
 john.w.estep@wv.gov

**Vendor Signature X** *H. Masud* **FEIN#** 85-1143501 **DATE** 6/4/2026

**All offers subject to all terms and conditions contained in this solicitation**

**ADDITIONAL INFORMATION****REQUEST FOR QUOTATION**

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Division of Highways (WVDOH), the West Virginia Division of Corrections (WVDOC), and WV Parkways Authority to establish an open-end contract for Reflective Sign Sheeting & Associated Materials. Per the Bid Requirements, Specifications, Terms and Conditions attached to this solicitation.

**INVOICE TO****SHIP TO**

VARIOUS AGENCY  
LOCATIONS  
AS INDICATED BY ORDER

STATE OF WEST VIRGINIA

VARIOUS LOCATIONS AS  
INDICATED BY ORDER

No City                      WV  
US

No City                      WV  
US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Sign sheeting material	1.00000	EA		

Comm Code	Manufacturer	Specification	Model #
55121734			

**Extended Description:**

Sign sheeting material

**SCHEDULE OF EVENTS**

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	Tech Questions due by 10:00am	2026-05-27

	Document Phase	Document Description	Page
DOT2600000092	Final	REFLECTIVE SIGN SHEETING & ASSOCIATED MATERIALS	3

**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

## **GENERAL TERMS AND CONDITIONS:**

**1. CONTRACTUAL AGREEMENT:** Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

**2. DEFINITIONS:** As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

**2.1. "Agency" or "Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

**2.2. "Bid" or "Proposal"** means the vendors submitted response to this solicitation.

**2.3. "Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

**2.4. "Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.

**2.5. "Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.

**2.6. "Award Document"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

**2.7. "Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

**2.8. "State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

**2.9. "Vendor" or "Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

**3. CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

**Term Contract**

**Initial Contract Term:** The Initial Contract Term will be for a period of one (1) year \_\_\_\_\_. The Initial Contract Term becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as \_\_\_\_\_), and the Initial Contract Term ends on the effective end date also shown on the first page of this Contract.

**Renewal Term:** This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to three (3) \_\_\_\_\_ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

**Alternate Renewal Term** – This contract may be renewed for \_\_\_\_\_ successive \_\_\_\_\_ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

**Delivery Order Limitations:** In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

**Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within \_\_\_\_\_ days.

**Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within \_\_\_\_\_ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that:

the contract will continue for \_\_\_\_\_ years;

the contract may be renewed for \_\_\_\_\_ successive \_\_\_\_\_ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's Office (Attorney General approval is as to form only).

**One-Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

**Construction/Project Oversight:** This Contract becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as \_\_\_\_\_), and continues until the project for which the vendor is providing oversight is complete.

**Other:** Contract Term specified in \_\_\_\_\_

**4. AUTHORITY TO PROCEED:** Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced.

**5. QUANTITIES:** The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

**Open End Contract:** Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

**Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

**Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

**One-Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

**Construction:** This Contract is for construction activity more fully defined in the specifications.

**6. EMERGENCY PURCHASES:** The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute a breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One-Time Purchase contract.

**7. REQUIRED DOCUMENTS:** All of the items checked in this section must be provided to the Purchasing Division by the Vendor as specified:

**LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

**8. INSURANCE:** The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

Vendor must maintain:

**Commercial General Liability Insurance** in at least an amount of: \$1,000,000 per occurrence.

**Automobile Liability Insurance** in at least an amount of: \$1,000,000 per occurrence.

**Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: \_\_\_\_\_ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

**Commercial Crime and Third Party Fidelity Insurance** in an amount of: \_\_\_\_\_ per occurrence.

**Cyber Liability Insurance** in an amount of: \_\_\_\_\_ per occurrence.

**Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

**Pollution Insurance** in an amount of: \_\_\_\_\_ per occurrence.

**Aircraft Liability** in an amount of: \_\_\_\_\_ per occurrence.

**9. WORKERS' COMPENSATION INSURANCE:** Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

**10. VENUE:** All legal actions for damages brought by Vendor against the State shall be brought in the West Virginia Claims Commission. Other causes of action must be brought in the West Virginia court authorized by statute to exercise jurisdiction over it.

**11. LIQUIDATED DAMAGES:** This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

\_\_\_\_\_ for \_\_\_\_\_.

Liquidated Damages Contained in the Specifications.

Liquidated Damages Are Not Included in this Contract.

**12. ACCEPTANCE:** Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

**13. PRICING:** The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

**14. PAYMENT IN ARREARS:** Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software maintenance, licenses, or subscriptions may be paid annually in advance.

**15. PAYMENT METHODS:** Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

**16. TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

**17. ADDITIONAL FEES:** Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

**18. FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.

**19. CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

**20. TIME:** Time is of the essence regarding all matters of time and performance in this Contract.

**21. APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.

**22. COMPLIANCE WITH LAWS:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

**SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

**23. ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

**24. MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

**25. WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

**26. SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

**27. ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

**28. WARRANTY:** The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

**29. STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

**30. PRIVACY, SECURITY, AND CONFIDENTIALITY:** The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in [www.state.wv.us/admin/purchase/privacy](http://www.state.wv.us/admin/purchase/privacy).

**31. YOUR SUBMISSION IS A PUBLIC DOCUMENT:** Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

**DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.**

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

**32. LICENSING:** In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

**SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

**33. ANTITRUST:** In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

**34. VENDOR NON-CONFLICT:** Neither Vendor nor its representatives are permitted to have any interest, nor shall they acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

**35. VENDOR RELATIONSHIP:** The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

**36. INDEMNIFICATION:** The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

**37. NO DEBT CERTIFICATION:** In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State. By submitting a bid, or entering into a contract with the State, Vendor is affirming that (1) for construction contracts, the Vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, neither the Vendor nor any related party owe a debt as defined above, and neither the Vendor nor any related party are in employer default as defined in the statute cited above unless the debt or employer default is permitted under the statute.

**38. CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

**39. REPORTS:** Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at [purchasing.division@wv.gov](mailto:purchasing.division@wv.gov).

**40. BACKGROUND CHECK:** In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

**41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS:** Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process.
- c. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
  1. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
  2. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

**42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL:** In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a “substantial labor surplus area”, as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

**43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE:** W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the Vendor must submit to the Agency a disclosure of interested parties prior to beginning work under this Contract. Additionally, the Vendor must submit a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-work interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

**44. PROHIBITION AGAINST USED OR REFURBISHED:** Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

**45. VOID CONTRACT CLAUSES:** This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

**46. ISRAEL BOYCOTT:** Bidder understands and agrees that, pursuant to W. Va. Code § 5A-3-63, it is prohibited from engaging in a boycott of Israel during the term of this contract.

**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title) Hamza Masud  
Executive Director

(Address) 7491 Flag Point Ct., Manassas, VA 20109

(Phone Number) / (Fax Number) (703) 870-6182

(email address) hamza.masud@swiperesources.com

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

*By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.*

Swipe Resources LLC

(Company) \_\_\_\_\_

H. Masud

(Signature of Authorized Representative) \_\_\_\_\_

Hamza Masud, Executive Director

(Printed Name and Title of Authorized Representative) (Date) \_\_\_\_\_

(703) 870-6182

(Phone Number) (Fax Number) \_\_\_\_\_

(Email Address) hamza.masud@swiperesources.com

REQUEST FOR QUOTATION  
**Reflective Sign Sheeting & Associated Materials**

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**SPECIFICATIONS**

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Division of Highways (WVDOH), the West Virginia Division of Corrections (WVDOC), and WV Parkways Authority to establish an open-end contract for Reflective Sign Sheeting & Associated Materials.
  
2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
  - 2.1 **“Contract Item” or “Contract Items”** means the list of items identified in Section 3.1 below and on the Pricing Pages.
  
  - 2.2 **“Pricing Pages”** means the schedule of prices, estimated order quantity, and totals contained in wvOASIS or attached hereto as Exhibit\_A, and used to evaluate the Solicitation responses.
  
  - 2.3 **“Solicitation”** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
  
  - 2.4 **“RFQ”** means the official RFQ published by the Purchasing Division.
  
  - 2.5 **“WVDOH”** means the West Virginia Division of Highways
  
  - 2.6 **“WVDOC”** means the West Virginia Division of Corrections
  
  - 2.7 **“CSS”** means the WVDOH Central Sign Shop manufacturing facility.
  
  - 2.8 **“Type ASTM-I Reflective Sheeting”** means a retroreflective sheeting referred to as “engineering grade” that is typically a non-metalized micro-prismatic retroreflective element material.
  
  - 2.9 **“Type ASTM-IV Reflective Sheeting”** means a retroreflective sheeting referred to as “high-intensity” that is typically a non-metalized micro-prismatic retroreflective element material.
  
  - 2.10 **“Type ASTM-XI Reflective Sheeting”** means a retroreflective sheeting typically manufactured as a non-metalized cube corner micro-prismatic retroreflective element material.
  
  - 2.11 **“Opaque Film”** means an opaque, typically vinyl or acrylic pressure-sensitive film designed for permanent graphics that may be pre-spaced and electronically cut.

REQUEST FOR QUOTATION  
**Reflective Sign Sheeting & Associated Materials**

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- 2.12 “Transparent Film”** means a colored, transparent, typically acrylic, pressure-sensitive film designed for permanent graphics that may be pre-spaced and electronically cut.
- 2.13 “Opaque Ink”** means an opaque, weather resistant, quick drying ink designed for use in traffic sign screen printing processes.
- 2.14 “Transparent ink”** means a transparent, weather resistant, quick drying ink designed for use in traffic sign screen printing processes.
- 2.15 “UV”** means ultraviolet.
- 2.16 “O.D.”** means Outside Diameter.
- 2.17 “I.D.”** means Inside Diameter
- 2.18 “Overage”** means the total width of excess material (beyond the specified nominal width) provided on a roll of reflective sheeting material in order to insure complete coverage of the aluminum blanks the material is applied to.
- 2.19 “Matched Components”** means the reflective sheeting manufacturer’s recommended transparent & opaque inks & films to be used for manufacturing purposes with the manufacturer’s reflective sheeting products.
- 2.20 “Standard Specifications”** means the portion of the WVDOH Standard Specifications for Roads and Bridges pertaining to the materials included in this Contract. The current Standard Specifications which pertain to the materials in this Contract are contained in Section 715.9.2 of the publication West Virginia Department of Transportation, Division of Highways, Standard Specifications Roads and Bridges, 2023 Edition. This publication may be found at the following address:

<https://transportation.wv.gov/highways/TechnicalSupport/specifications/Pages/default.aspx>

Specific material approval requirements for the materials included in this Contract, as well as compensative requirements of the material manufacturer in the event of material failure, as defined by the material durability and warranty requirements, are included in the Standard Specifications. Material approval requirements include, but may not be limited to, performance, durability, testing, manufacturer certification, and general material characteristic requirements. The Standard Specifications also specifies additional requirements required to be met by materials in order for those

REQUEST FOR QUOTATION  
**Reflective Sign Sheeting & Associated Materials**

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materials to be qualified for use in manufacturing processes within the CSS. All materials supplied under this Contract must be qualified for use in manufacturing processes within the CSS. The specifications and Contract Award provisions herein are reflective of this requirement.

- 2.21 “APL”** means the version of the WVDOH Approved Products List for Retroreflective Sign Sheeting in effect as of the advertising date of this Contract. This APL may be found at:

[https://transportation.wv.gov/highways/mcst/Pages/APL\\_By\\_Number.aspx](https://transportation.wv.gov/highways/mcst/Pages/APL_By_Number.aspx)

The APL is established in a manner consistent with the requirements contained in the Standard Specifications. All materials supplied under this Contract shall be listed on the APL. Additional requirements shall apply as specified herein. The APL establishes a list of products that meet the acceptable level of quality and is not intended to reflect a preference or favor any particular brand or vendor. Any manufacturer whose product(s) meet the established level of quality may become an approved supplier and have their product(s) added to the APL in accordance with the approval procedures described in the Standard Specifications.

Note that, as indicated in the Standard Specifications, the inclusion of the manufacturer’s reflective sheeting material on the APL is not the sole requirement for that material to be eligible to be supplied under this Contract. All requirements are specified in detail in the Standard Specifications. The APL notes any restrictions in place in regard to the use of a particular reflective sheeting product or its’ matched components for manufacturing purposes within the CSS.

### **3. GENERAL REQUIREMENTS:**

- 3.1 Contract Items and Mandatory Requirements:** Vendor shall provide Agency with the Contract Items listed below on an open-end and continuing basis. Contract Items must meet or exceed the mandatory requirements as shown below.

The specifications of this RFQ and/or any WVDOH Standards referenced in and/or attached to this RFQ may include references to specific recognized “industry standard” specifications which are issued by third parties, such as the American Society for Testing and Materials (ASTM) and the American Association of State and Highway Transportation Officials (AASHTO). Such specifications are protected by strict copyright restrictions and cannot be published as part of this RFQ. The ability to access such specifications shall be considered a mandatory requirement for participation in the RFQ process as a Vendor or as a supplier to the Vendor, as applicable.

REQUEST FOR QUOTATION  
**Reflective Sign Sheeting & Associated Materials**

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**3.1.1 Contract Bid Items:** The following Sections and described Items are listed on the Pricing Pages (see attachment: EXHIBIT\_A Pricing Pages).

**3.1.1.1 Section I: Type ASTM-I Retroreflective Sheeting**

**3.1.1.1.1** The reflective sheeting material supplied under this Section shall be listed on the APL. The reflective sheeting material and the manufacturer recommended matched components (transparent film & ink, opaque film & ink) for use with the supplied reflective sheeting must all be approved by the WVDOH for manufacturing purposes within the CSS.

**3.1.1.1.2** For particular nominal roll sizes of reflective sheeting listed on the Pricing Pages, a “preferred” overage is indicated in the “Overage Preferences” column. The preferred overage indicates the agencies’ preferred overages only, and are not a minimum requirement; however, these materials shall be provided with overage. If nothing is indicated in the “Overage Preferences” column, then no overage is required; however, the width specified in the “Item Description” column shall be the minimum actual width of the material.

**3.1.1.1.3** The manufacturer of the material supplied under this Section shall be the same manufacturer whose material is supplied under Sections II & III.

**3.1.1.2 Section II: Type ASTM-IV Retroreflective Sheeting**

**3.1.1.2.1** The reflective sheeting material supplied under this Section shall be listed on the APL. The reflective sheeting material and the manufacturer recommended matched components (transparent film & ink, opaque film & ink) for use with the supplied reflective sheeting must all be approved by

**REQUEST FOR QUOTATION**  
**Reflective Sign Sheeting & Associated Materials**

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the WVDOH for manufacturing purposes within the CSS.

**3.1.1.2.2** For particular nominal roll sizes of reflective sheeting listed on the Pricing Pages, a “preferred” overage is indicated in the “Overage Preferences” column. The preferred overage indicates the agencies’ preferred overages only, and are not a minimum requirement; however, these materials shall be provided with overage. If nothing is indicated in the “Overage Preferences” column, then no overage is required; however, the width specified in the “Item Description” column shall be the minimum actual width of the material.

**3.1.1.2.3** The manufacturer of the material supplied under this Section shall be the same manufacturer whose material is supplied under Sections I & III.

**3.1.1.3 Section III: Type ASTM-XI Retroreflective Sheeting**

**3.1.1.3.1** The reflective sheeting material supplied under this Section shall be listed on the APL. The reflective sheeting material and the manufacturer recommended matched components (transparent film & ink, opaque film & ink) for use with the supplied reflective sheeting must all be approved by the WVDOH for manufacturing purposes within the CSS.

**3.1.1.3.2** For particular nominal roll sizes of reflective sheeting listed on the Pricing Pages, a “preferred” overage is indicated in the “Overage Preferences” column. The preferred overage indicates the agencies’ preferred overages only, and are not a minimum requirement; however, these materials shall be provided with overage. If nothing is indicated in the “Overage Preferences” column, then no overage is required; however, the width

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**Reflective Sign Sheeting & Associated Materials**

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specified in the "Item Description" column shall be the minimum actual width of the material.

**3.1.1.3.3** The manufacturer of the material supplied under this Section shall be the same manufacturer whose material is supplied under Sections I & II.

**3.1.1.4 Section IV: Type ASTM-I, ASTM-IV, and Type ASTM-XI Retroreflective Sheeting Matched Components**

**3.1.1.4.1** Transparent and opaque matched component films for use with the reflective sheetings provided under Sections I, II, and III shall be supplied under this Section.

**3.1.1.4.2** The films supplied under this Section shall be the manufacturer recommended films for use with the reflective sheetings provided under Sections I, II, and III.

**3.1.1.4.3** The manufacturer of the material supplied under this Section shall be the same manufacturer whose material is supplied under Sections I, II, and III.

**3.1.1.5 Ancillary Items:** For particular Sections of this Contract, the Vendor shall be required to supply ancillary items with the sheeting materials. These ancillary items shall be supplied at **no additional cost to the Agency** and shall be incidental to the pricing provided by the Vendor for the bid items in the applicable Sections of the Contract. The quantity of the items provided shall be based on the square footage of sheeting material ordered, as described below.

**3.1.1.5.1 Inks:** This requirement shall apply to Sections II and III of this Contract. The ink provided shall be the reflective sheeting material manufacturer recommended matched component ink with UV inhibitor.

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**3.1.1.5.1.1** The Vendor shall be required to supply one (1) gallon of transparent ink per 1,200 square feet of reflective sheeting ordered and/or one (1) gallon of black ink per 2,500 square feet of reflective sheeting ordered.

**3.1.1.5.1.2** The square footage shall be calculated based on the nominal roll size (the size listed under the line item).

**3.1.1.5.1.3** The number of gallons of ink in each color shall be indicated by the purchasing Agency on the Release Order.

**3.1.1.5.1.4** The quantity of ink required to be supplied shall be based on the total combined square footage of materials ordered under Sections II and III.

**Example:** If the Agency orders 8,500 combined square feet of material under Sections II and III, the Agency may elect to require the Vendor to supply five (5) gallons of transparent ink and one (1) gallon of black ink [(1 x 2,500) + (5 x 1,200) = 8,500].

The Vendor shall not be required to supply partial gallons. For example, if the Agency orders 8,000 combined square feet of material under Sections II and III, and the Agency requires the Vendor to supply one (1) gallon of black ink, the Vendor shall only be required to supply as much as four (4) gallons of transparent ink.

**3.1.1.5.2 Nylon Washers:** This requirement shall apply to Sections II and III of this Contract. The washers provided shall measure 5/16" (I.D.) x 7/8" (O.D.) x 1/16" thick, and shall be manufactured from commercial grade nylon.

**3.1.1.5.2.1** The Vendor shall be required to supply one (1) package of washers per 3,500 square feet of reflective sheeting ordered.

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**3.1.1.5.2.2** In order to integrate with the WVDOH's inventory system, each package of washers shall include 1,000 individual washers.

**3.1.1.5.2.3** The square footage shall be calculated based on the nominal roll size (the size listed under the line item). The total square footage of reflective sheeting ordered under Sections II and III shall be combined in order to determine the quantity of washers required to be supplied.

**3.1.1.5.2.4** The number of washers required to be supplied shall be indicated by the purchasing Agency on the Release Order.

**Example:** If 17,500 total square feet of reflective sheeting material is ordered from the indicated Sections, the Vendor shall be required to supply 5,000 washers (five packages) (5 x 3,500 = 17,500).

The Vendor shall not be required to supply partial packages. For example, if 18,500 total square feet of reflective sheeting is ordered, then the Vendor shall only be required to supply five (5) packages (5,000 washers).

**3.1.1.5.3 Slip Sheeting:** This requirement shall apply to Sections II and III of this Contract. With the exception of 12-3/4" reflective sheeting and nominal roll widths of sheeting less than 12".

**3.1.1.5.3.1** The Vendor shall supply slip sheeting equal in width to each different width (nominal) reflective sheeting material ordered under these Sections.

**3.1.1.5.3.2** The total length of each width supplied shall be at least equal to the total length of each width of reflective sheeting ordered under these Sections.

**3.1.1.5.3.3** All slip sheeting shall be supplied in roll form.

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**3.1.1.5.3.4** The slip sheeting shall be compatible with the sheeting manufacturer's reflective sheeting material and matched components.

**3.1.1.5.3.5** The minimum total length of each width of slip sheeting required to be supplied shall be indicated by the purchasing Agency on the Release Order.

#### **4. CONTRACT AWARD:**

**4.1 Contract Award:** The Contract is intended to provide Agencies with a purchase price on all Contract Items.

Award shall not be split for this Contract. Award of this Contract shall be based on the lowest overall bid received. In order to be considered for award, the Vendor must provide a bid for all items and all materials to be provided shall meet the requirements specified herein.

**4.2 Pricing Pages:** Vendor should complete the Pricing Pages by providing a unit price for each item listed.

In order to be considered for award, the Vendor must provide a bid for **all items** and the materials bid must meet all applicable requirements and specifications included and referenced herein. Failure to provide pricing for all items on the pricing pages will result in bid disqualification.

The Vendor should also specify the material to be supplied (manufacturer product code) in the location provided for each line item. This Contract shall not be awarded to any Vendor prior to receipt of this information from the Vendor.

The Vendor should also enter a calculated value [estimated quantity x unit price] in the "Extended Total Amount" column.

The Pricing Pages contain a list of the Contract Items and estimated purchase volume. The estimated purchase volume for each item represents the approximate volume of anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied.

Vendor should electronically enter the information into the Pricing Pages through wvOASIS, if available, or as an electronic document. In most cases, the Vendor can request an electronic copy of the Pricing Pages for bid purposes by sending an email request to the following address: [John.W.Estep@wv.gov](mailto:John.W.Estep@wv.gov)

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**5. ORDERING AND PAYMENT:**

- 5.1 Ordering:** Vendor shall accept orders through wvOASIS, regular mail, facsimile, e-mail, or any other written form of communication. Vendor may, but is not required to, accept on-line orders through a secure internet ordering portal/website. If Vendor has the ability to accept on-line orders, it should include in its response a brief description of how Agencies may utilize the on-line ordering system. Vendor shall ensure that its on-line ordering system is properly secured prior to processing Agency orders on-line.
- 5.2 Payment:** Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.
- 5.3 Minimum Order Size:** There shall be no minimum order size associated with this Contract.

**6. DELIVERY AND RETURN:**

- 6.1 Delivery Time:** Vendor shall deliver standard orders within twenty-five (25) working days after orders are received. Vendor shall ship all orders in accordance with the above schedule and shall not hold orders until a minimum delivery quantity is met.
- 6.2 Late Delivery:** The Agency placing the order under this Contract must be notified in writing if orders will be delayed for any reason. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the delayed order, and/or obtaining the items ordered from a third party.

Any Agency seeking to obtain items from a third party under this provision must first obtain approval of the Purchasing Division.

Regardless of whether or not the vendor provides written notification of an order delay, if the Vendor is unable to deliver in full within twenty-five (25) Working Days after receipt of the order, the Vendor shall be subject to a daily (per Calendar Day) penalty in the amount of \$150.00 at the purchasing Agency's discretion for each Calendar Day beyond the delivery deadline date until the order is received in full. This penalty shall be assessed by subtracting the penalty from the original total value of the Release Order. The penalty shall not exceed the original total amount of the Release Order.

- 6.3 Delivery Payment/Risk of Loss:** Standard order delivery shall be F.O.B. destination to the Agency's location. Vendor shall include the cost of standard order delivery charges in its bid pricing/discount and is not permitted to charge the Agency

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separately for such delivery.

- 6.4 Packaging & Material Condition:** Upon delivery, all materials shall be of good appearance free from ragged edges, cracks, and extraneous materials, and shall be supplied in roll form. The materials shall be evenly wound on a core of sufficient rigidity to prevent distortion of the roll. For sheeting materials, the maximum number of splices shall be four (4) per 50-yd roll. Each splice shall be visible at the edge of the roll. Rolls shall be packaged snugly in corrugated fiberboard boxes such that no damage or defacement may occur during shipment or storage.
- 6.5 Return of Unacceptable Items:** If the Agency deems the Contract Items to be unacceptable, the Contract Items shall be returned to Vendor at Vendor's expense and with no restocking charge. Vendor shall either make arrangements for the return within five (5) days of being notified that items are unacceptable, or permit the Agency to arrange for the return and reimburse Agency for delivery expenses. If the original packaging cannot be utilized for the return, Vendor will supply the Agency with appropriate return packaging upon request. All returns of unacceptable items shall be F.O.B. the Agency's location. The returned product shall either be replaced, or the Agency shall receive a full credit or refund for the purchase price, at the Agency's discretion. If the Agency elects to have the returned items replaced, the provisions of Sections 6.1 and 6.2 shall remain in effect until the order is completed in full with material accepted by the Agency.
- 6.6 Return Due to Agency Error:** Items ordered in error by the Agency will be returned for credit within 30 days of receipt, F.O.B. Vendor's location. Vendor shall not charge a restocking fee if returned products are in a resalable condition. Items shall be deemed to be in a resalable condition if they are unused and in the original packaging. Any restocking fee for items not in a resalable condition shall be the lower of the Vendor's customary restocking fee or 5% of the total invoiced value of the returned items.

**7. VENDOR DEFAULT:**

**7.1** The following shall be considered a vendor default under this Contract.

- 7.1.1 Failure to provide Contract Items in accordance with the requirements contained herein.
- 7.1.2 Failure to comply with other specifications and requirements contained herein.
- 7.1.3 Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.

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7.1.4 Failure to remedy deficient performance upon request.

7.2 The following remedies shall be available to Agency upon default.

7.2.1 Immediate cancellation of the Contract.

7.2.2 Immediate cancellation of one or more release orders issued under this Contract.

7.2.3 Any other remedies available in law or equity.

**8. MISCELLANEOUS:**

**8.1 No Substitutions:** Vendor shall supply only Contract Items submitted in response to the Solicitation unless a contract modification is approved in accordance with the provisions contained in this Contract.

**8.2 Vendor Supply:** Vendor must carry sufficient inventory of the Contract Items being offered to fulfill its obligations under this Contract. By signing its bid, Vendor certifies that it can supply the Contract Items contained in its bid response.

**8.3 Reports:** Vendor shall provide quarterly reports and annual summaries to the Agency showing the Agency's items purchased, quantities of items purchased, and total dollar value of the items purchased. Vendor shall also provide reports, upon request, showing the items purchased during the term of this Contract, the quantity purchased for each of those items, and the total value of purchases for each of those items. Failure to supply such reports may be grounds for cancellation of this Contract.

**8.4 Technical Assistance:** If awarded any Section of this Contract, the successful Vendor shall, upon request by any of the Agencies named in this Contract, provide technical assistance for the service of application equipment and instruction and training of Agency personnel in the proper application of the materials supplied. This may include, but shall not be limited to, calibration and troubleshooting of application equipment, training films, material application, screen printing, packaging, storage, and the proper use & handling of inks.

**8.5 Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

REQUEST FOR QUOTATION  
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**Contract Manager:** Hamza Masud  
**Telephone Number:** (703) 870-6182  
**Fax Number:** \_\_\_\_\_  
**Email Address:** hamza.masud@swiperesources.com



Traffic Safety and Security Division

# 3M™ ElectroCut™ Film Series 1170

Product Bulletin 1170  
October 2016

Replaces PB 1170 dated July 2007

## Description

3M™ ElectroCut™ Film Series 1170 is a durable, transparent, acrylic film coated with a transparent, pressure-sensitive adhesive that is protected by a removable liner, available in the colors in Table 1.

**Table 1. Product Codes by Color**

Color	Product Code
Clear	1170C
Yellow	1171
Red	1172
Orange	1174
Blue	1175
Worboy Green*	1176
Green	1177
Black (Opaque)	1178
Brown	1179

\*Standard green color for U.K., Australia, and New Zealand

Series 1170 is intended for use on 3M Reflective Sheeting as part of 3M's system of matched components for signing. Series 1170 has a clear pressure-sensitive adhesive compatible with all the following 3M reflective sheetings used in permanent signing:

- 3M Advanced Engineer Grade Prismatic Series 7930
- 3M Engineer Grade Prismatic Series 3430
- 3M Engineer Grade Series 3290
- 3M High Intensity Prismatic Series 3930 and 3930TT
- 3M Diamond Grade™ Series 3990 and 3990TT
- 3M Diamond Grade™ DG<sup>3</sup> Series 4000 and 4000TT
- 3M Diamond Grade™ Translucent DG<sup>3</sup> Reflective Sheeting 4090T



Additionally, 3M™ ElectroCut Film 1170C Clear must be used with the following 3M reflective sheetings:  
 3M Diamond Grade DG<sup>3</sup> Prismatic Digital Sheeting 4090DS (White)  
 3M High Intensity Prismatic Digital Sheeting 3930DS (White)

Series 1170 is designed with a special film liner for kiss-cutting on electronic cutting machines. Rolls are available prepunched for sprocket fed cutters or unpunched for flatbed or friction fed cutters. The colored films in the Series 1170 are often used instead of silk screened inks to provide transparent colored background copy for retroreflective street name signs and other traffic control signs. Various film widths are available to fabricate single sign panels up to 48 inches wide. For single panel signs requiring more than a single piece of sheeting or for multipanel signs such as guide signs, be sure to follow 3M color matching procedures in [Information Folder 1.10](#) to achieve satisfactory results. For best color uniformity on a colored multipanel sign, all panels must be made from the same lot of Series 1170.

## Properties

Transparent clear, yellow, red, orange, blue, worboy green, green, black (opaque), and brown versions of the Series 1170 applied to compatible 3M retroreflective sheetings listed in the above section can be expected to provide performance comparable to the integrally colored version of the same reflective sheeting. The coefficient of retroreflection of a white sheeting overlaid with the Series 1170 depends primarily on the overlay film transparency and the coefficient of retroreflection of the white base sheeting. Series 1170 applied on the compatible microprismatic 3M retroreflective sheetings listed in the above section according to 3M recommendations will yield chromaticity values within the chromaticity limits given in ASTM D4956-16.

Table 1 gives the resultant minimum and maximum coefficient of retroreflection ( $R_A$ ) values for each transparent Series 1170 film as a percentage of the  $R_A$  of the white reflective base sheeting on which it is applied.

**Table 2. Coefficient of retroreflection\* ( $R_A$ ) after application of colored film Series 1170 versus the  $R_A$  of the white base sheeting (expressed as %)**

Film	Minimum (% of base sheeting)	Maximum (% of base sheeting)
1171 (Yellow)	60	80
1172 (Red)	14	24
1174 (Orange)	30	--
1175 (Blue)	6.5	20
1176 (Worboy Green)	8	14
1177 (Green)	13	20
1179 (Brown)	5	--

\* $R_A$  measurements shall be made at 0.2° observation angle, -4° entrance angle, and 0° rotation, per ASTM E810.

## Film Liner

Series 1170 films have a transparent film release liner designed to aid the cutting process and the removal of the film weed after cutting.

## Storage

Store in a cool, dry area 65-75° F (18-24° C), 30-50% relative humidity, and use within one year from date of receipt.

## Fabrication – Cutting and Application Procedures

Important Note: Read and follow the manufacturer's operating manual carefully for proper use of cutting equipment.

1. Adjust knife pressure to cut cleanly through the film and slightly score the liner. A 30° blade works best.
2. A clean cutting blade is required. To remove adhesive build-up use a soft cloth dampened with mineral spirits, isopropyl alcohol or 3M™ Citrus Base Cleaner.
3. Avoid excessive flexing when handling film as this may cause film to release from the liner.
4. After cutting is complete, lay sheets flat, face to face, back to back. Always store sheets in this manner until the sheeting has been weeded and transfer tape has been applied to sheeting.
5. Use a stripping tool designed for weeding films that has a blunt (not a sharp) edge.
6. After weeding is completed, also store sheets flat, face to face and back to back, until transfer tape is applied.
7. TPM-5 Clear Transfer Tape is recommended for best results. SCPM-3 Application Tape is also satisfactory for use on small signs. Other transfer tapes are not recommended.
8. Transfer tape can be applied either by hand using a plastic squeegee or through a hand squeeze roll applicator (HSRA). If applying the transfer tape by hand, care must be taken to always squeegee from the center to the outside in both directions. If applying the transfer tape through the HSRA the air pressure must be at 30 psi to avoid stretching the premask during application, and the “lead” edge must be cut square and fed into the nip very carefully to avoid wrinkles in the Series 1170.
9. Film Series 1170 may be applied to the sheeting either before or after the sheeting has been applied to the substrate. Use of an HSRA is recommended to ensure satisfactory results. Use the “split liner method” – start in the middle of the sheet and remove half the liner to ensure proper alignment.
10. After film Series 1170 and sheeting have been applied, remove the transfer tape by carefully removing the tape at as low an angle as possible.
11. IMPORTANT! When the transfer tape has been removed, reroll the sign through the laminator to ensure good adhesion.
12. Excess or overhanging film Series 1170 should be trimmed using a sharp utility knife held at a 30° angle with the substrate.

## Health and Safety Information

Read all health hazard, precautionary, and first aid statements found in the Safety Data Sheets (SDS) and Article Information Sheets for important health, safety and environmental information. To obtain SDSs and Article Information Sheets for 3M products, go to [3M.com/SDS](http://3M.com/SDS), or by mail, or in case of an emergency, call 1-800-364-3577.

## Warranty

For detailed warranty information, please refer to the sheeting product bulletins and the [3M™ MCS™ Warranty for Traffic](#) and [MCS Warranty Bulletins](#).

3M assumes no responsibility for any injury, loss or damage arising out of the use of a product that is not of our manufacture. Where reference is made in literature to a commercially available product, made by another manufacturer, it shall be the user's responsibility to ascertain the precautionary measures for its use outlined by the manufacturer.

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**Important Notice**

All statements, technical information and recommendations contained herein are based on tests we believe to be reliable at the time of this publication, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, or conditions express or implied. Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct, special or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his/her intended use, and user assumes all risk and liability whatsoever in connection therewith. Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.



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# Cutting, Premasking and Prespacing of 3M™ Reflective Sheetings

Information Folder 1.10

September 2010

Replaces IF 1.10 dated July 2007

## Follow the Instructions

3M recommends only the standard practice outlined in this information folder. Procedures and materials which do not literally conform to these instructions are excluded. See warranty information in sheeting product bulletins.

## Cutting Sheets

Reflective sheetings can be cut using a variety of techniques. Single sheets can be hand cut, die cut or electronically cut. Volume cutting can be accomplished by methods such as band sawing, roll cutting or guillotine cutting.

All cutting tools must be kept sharp and clean to minimize the possibility of damage to sheeting or film or adhesive transfer.

In order to reduce the possibility of stress cracking, the inside corners of cut out letters and symbols should be rounded using the largest radius consistent with acceptable appearance, but in no case less than 1/8-inch.

### A. Electronic Cutting

All 3M reflective sheeting for permanent signing is electronic cuttable. Cutting can be accomplished on a flat bed plotter or friction fed plotter. Please contact 3M Traffic Safety Systems Division technical service for recommendations.

### B. Hand Cutting

Single sheets may be hand-cut using a scissors, razor blade, or other cutting tool. The cutting edges must be kept sharp.

When cutting with a razor blade or other tool, lay the sheeting or film, liner side down, on a flat surface and cut from the face side.

## C. Band Sawing General

A band saw can be used for general cutting of large sheets or for precision cutting of specific shapes.

### 1. Blade Selection

A “skip tooth” blade with few teeth per inch is used for cutting sheeting. It should have sufficient set for good clearance to prevent the teeth from filling. Blade specifications for two blades which have been used successfully are given below:

	Milford “Profile” Blade <u>No. S-3104</u>	Do-All “Buttress” <u>Blade</u>
Width	3/16"	3/16"
Pitch	4	4
Set	.042"	—
Gauge	.025"	.025"

The blade must be sharp in order to maintain a good edge when cutting curves and angles. When it dulls, the blade will begin to tear the sheeting, and must be changed.

### 2. Saw Speed/Stack Height

Corrected saw speeds are necessary for proper cutting. Do not use heavy pressure to accelerate cutting speed as it will overheat the blade. Recommended speeds and the maximum number of sheets to be cut in one stack are listed on page 2.

## D. Bandsawing Unprocessed Symbols and Legends

To cut symbols and legends from unprocessed sheeting, stack the material on a sheet of 1/4 inch plywood, and butt the sheetings tightly against guide boards set along the sides of the stack (Figure 1). When the stack is complete, cover with 1/8-inch wallboard upon which the pattern to be cut has been drawn or silk screened.

Drive nails through the stack and into the plywood to hold it in place, then remove the stack from the assembly fixture and saw as one piece. Note: If material is to be cut liner side up, layout must be drawn in reverse.

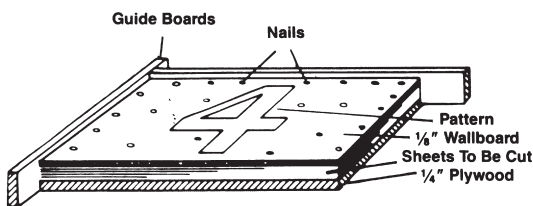


Figure 1

## E. Bandsawing Printed Emblems and Copy

When printed markings or copy are to be sawed, make sure that each sheet in the stack is in register. This may be done by registering the sheets, during screen printing, against the guide boards when stacking the sheets for sawing (See Figure 1). For best results sheets should be squared at three points or more.

Another method to assure accurate stacking is to include register marks in the screen printing stencil so that the marks appear on each sheet (Figure 2). Screen the register marks on the plywood base, and drive a nail perpendicular from the bottom up through the plywood in the center of each register mark. Build the stack by pushing the nail through the center of each register mark on each sheet. When complete, the stack will be perfectly aligned and all sheets will be cut the same way.

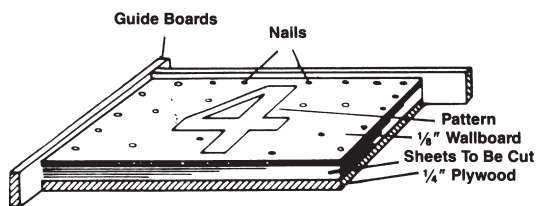


Figure 2

Not more than six sheets of 0.080 inch (2mm) or thicker aluminum may be cut in one stack; 10 sheets is the maximum stack height for aluminum which is less than 0.080: (2mm) thick.

## F. Unmounted Bandsawing

Unmounted 3M reflective sheeting can be processed using a saw speed of 1000-1500 feet per minute and a maximum of 25 sheets.

## G. Roll Cutting

Wide rolls can be cut to narrower widths using a roll cutting machine. The user must determine the accuracy and quality of cut for various sheetings.

## H. Guillotine Cutter

Large volume cutting of straight edge sheets and markings can be easily and accurately accomplished using a guillotine-type cutter. The type and condition of the cutter and the technique employed will determine accuracy, tolerances, and quality of the cut. Evaluation of the process for the intended use is recommended prior to volume cutting.

The table under "Cutting Recommendations" gives maximum stack height for sheets 24 inches x 24 inches (61cm x 61cm) or larger. For smaller sheets reduce stack height accordingly.

Cardboard inserts can be used as counters in the larger stacks. If the bottom sheet(s) have a rough finish or small tabs after cutting, a piece of cardboard placed at the bottom of the stack will ensure a cleaner cut. Cardboard inserts are to be figured as a part of the total stack height.

To clean the blade of residual adhesive material, paper and film dust, wipe periodically with a cloth soaked in mineral spirits, then dry the blades thoroughly.\* Sharp cutting blades are essential for good, clean cuts. If a blade is being used on an average of 8 hours per day, it should be resharpened every ten days.

\*When using solvents for clean-up, it is essential that proper precautionary measures for handling such materials be observed.

Certain sheetings should be double cut as specified in the "Cutting Recommendations" table since the bevel edge of the blade tends to crack these materials. Therefore, when trimming, waste portion of any stack to be cut should rest against bevel edge of blade (Figure 3). If a stack is to be cut in half, allow sufficient area for additional trim cut of that edge which rests against bevel edge of blade.

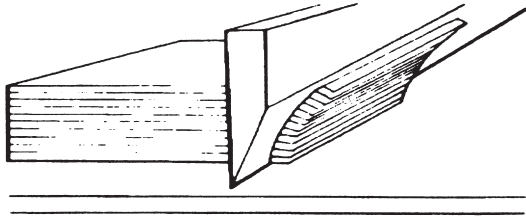


Figure 3

Some sheetings which have softer adhesives may tend to form tacky edges (adhesive ooze). To minimize ooze, the following procedures should be observed:

1. Ooze forms primarily on the flat side of the blade and not on the bevel side. Therefore, double cutting is not recommended.
2. Keep blade clean and sharp.
3. Cut in short stacks.
4. If adhesive ooze is encountered, it should be removed at the guillotine before the sheets are jobbed. Ooze can be removed easily by applying Scotch™ Masking Tape to the cut edge of the sheets. When the tape is removed, the adhesive ooze will adhere to the tape and be removed with the masking tape.
5. If adjustable, guillotine clamp bar pressure should be set at minimum.

### I. Steel Rule Die Cutting

Large volume cutting can be effectively accomplished using the die cutting technique. Die cutting is usually done in a platen press so the work may be hand-fed. The material is fed into the press, using the same edges of the material, side guide and gripper edge that the printer uses for this register. With careful make-ready, the platen is raised until the entire die design is cutting cleanly. Single bevel and double bevel steel rule dies typically provide the best performance.

Radius corners are recommended on cut-out letters to avoid stress cracking. Minimum radius should be 1/8-inch on 3-inch letters. Care must be taken to insure prismatic sheeting is not damaged by the punching action of the die press.

## Prespacing, Premasking and Transfer Tapes

Premasking and prespacing of sheeting simplifies the handling and application of markings and legends. 3M tapes fill these functions as follows:

### Uses of Tapes

#### Application Aid

Application tapes when applied properly to mark sheeting, reduce stretching, wrinkling and air entrapment during hand application. The increased stiffness provided by the tape aids with the handling of marking (4 sq. ft. or larger), striping, intricate sign markings and for applications performed at high temperatures.

#### Imprinted Application Instructions

Application instructions and registry marks which aid in positioning and application can be imprinted on the surface of the tape.

#### Prespace Legends & Markings

Prespacing cut out letter legends eliminates the time-consuming layout of individual letters on the application surface.

**Important:** Color or clear processed sheeting must be dried thoroughly before application of tape. Follow drying procedure recommended for color and sheeting used.

<b>Table 1</b>	
<u>Tape</u>	<u>Recommended Use</u>
SCPS-2 Prespacing Tape (White)	For prespacing legends which may or may not be premasked and for electronic cut letters and emblems.
SCPM-3 Application Tape (White)	Application Aid: Provides rigidity when liner is removed, reduces film stretching, wrinkling, and air entrapment during hand application, particularly helpful during hot weather or when applying large or intricately shaped emblems and letters.
TPM-5 Transfer Tape (Clear)	For premasking or applying prespaced legends wherever a clear transfer tape is desirable. Recommended for Series 1170 film.

## Hand Application of Tapes

Sheets from which emblems are to be cut should be left unmasked 1/8-inch to 1/4-inch (3-6mm) along one of the edges that form the registry corner. This corner will normally be used for registry during cutting and its edge must be free of tape. The untaped edge will be removed in final die-cutting or trimming.

**A. Strip application tape from roll and lay adhesive side up on table (Figure 5).**

**B. Drop material to be premasked into position face down on tape (Figure 6).**

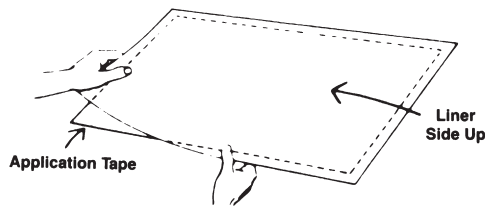


Figure 5

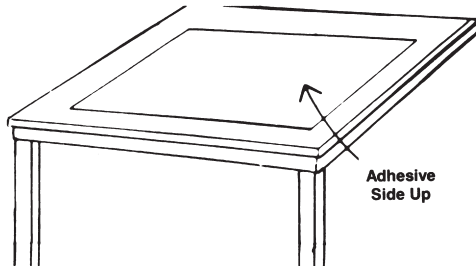


Figure 6

**C. Squeegee to tape from center out (Figure 7).**

**D. Trim to size or cut to shape (Figure 8).** Prespacing of letters smaller than 3/4-inch (1.9cm) on filigree and other intricate designs with narrow stroke widths must be on a test and approval basis.

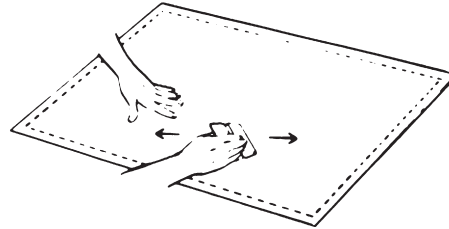


Figure 7

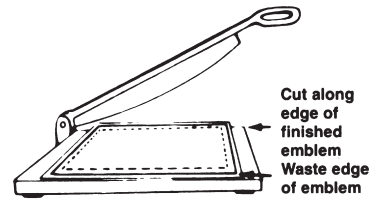


Figure 8

**E. The 3M Hand Squeeze Roll Applicator may be used to apply premask, prespacing and transfer tapes. Reference IF 1.6.**

**F. Squeeze Roller Application**

The Interstate Squeeze Roller Applicator may be used for premasking, prespacing and transfer tapes. Reference IF 1.4.

**G. Storage**

Store all tapes in a cool, dry area indoors and use tape within one year after date of purchase. Store rolls of tape horizontally from the roll core. Do not expose tape to sunlight.

Taped sheeting should be applied within one year after assembly. Exposure to sunlight may cause the tape to permanently bond to the sheeting or film. Avoid stacking; if temporary stacking is necessary, follow stacking recommendations for sheeting or film being stacked.

## H. Application of Premask or Prespaced

### Sheeting

The product combination of the taped sheeting may be applied by hand (IF 1.5), HSRA (IF 1.6) or powered squeeze roll (IF 1.4).

**Important:** To remove premask pull back on itself at 180° angle. After removal of the transfer tape, always resqueegee or reroll the sheeting.

### Health and Safety Information

Read all health hazard, precautionary, and first aid statements found in the Material Safety Data Sheet, and/or product label of chemicals prior to handling or use.

### Literature Reference

- IF 1.4 Instructions for the Interstate Squeeze Roll Applicator
- IF 1.5 Hand Application Instructions for Reflective Sheeting and Scotchal™ Films with PSA
- IF 1.6 Hand Squeeze Roll Applicators

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Commercial Branding and Transportation Division

# 3M™ Diamond Grade™ DG<sup>3</sup> Reflective Sheeting Series 4000

Product Bulletin 4000  
February 2024

Replaces Product Bulletin Series 4000 Dated March 2023

## 1 Description

3M™ Diamond Grade™ DG<sup>3</sup> Reflective Sheeting Series 4000 (“Sheeting”) is a full cube retroreflective prismatic sheeting that has been designed for production of traffic control and guidance signs (“Signs”) that are exposed vertically in service.

For details of the features and benefits of the Sheeting, please refer to the 3M Transportation Safety Division website (<http://www.3M.com/roadsafety/>).

The Sheeting is available in the following colors.

**Table 1.** Product codes by color.

Color	Product Code
White	4090
Yellow	4091
Red	4092
Blue	4095
Green	4097
Brown	4099
Fluorescent Yellow - FY	4081
Fluorescent Yellow-Green - FYG	4083
Fluorescent Orange - FO	4084

## 2 Specifications

The Sheeting conforms to all current performance requirements of ASTM D4956 for Type IX and Type XI retroreflective sheeting. Refer to section 7 for information regarding imaging of Sheeting.

## 3 System of Matched Components

For a complete list of matched components for the Sheeting, please see the [3M™ Sign Warranty Bulletin](#).

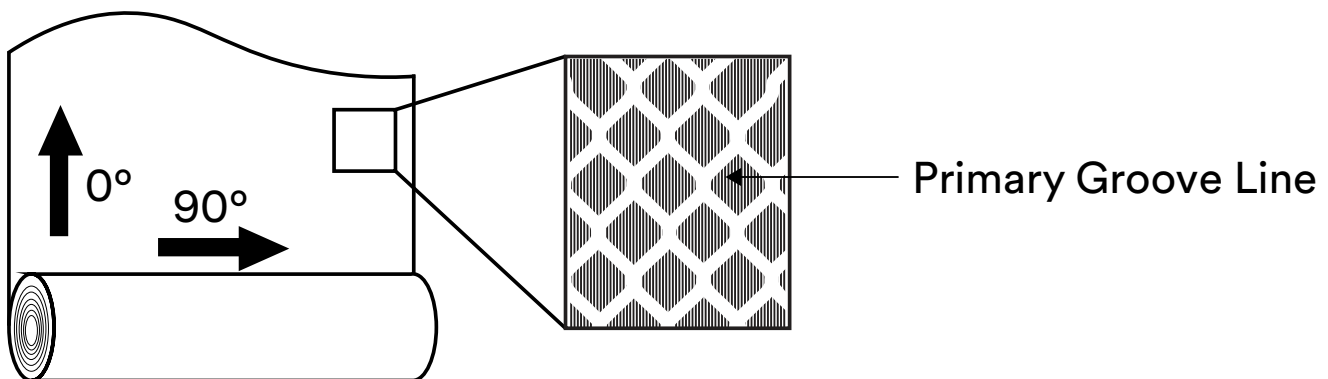
## 4 Physical Properties

### 4.1 Adhesive

Sheeting comes with a pressure-sensitive adhesive that is recommended for application at temperatures of 65 °F (18 °C) and higher. Meets ASTM D4956 Class I adhesive requirement.

### 4.2 Entrance Angularity Performance with Respect to Orientation

Sheeting has been designed to be an effective wide angle reflective sheeting regardless of its orientation on the substrate or the ultimate orientation of the Sign after installation. However, because the efficiency of light return from cube corner reflectors is not equal at all application orientations, especially at higher entrance angles, it is possible to get the widest entrance angle light return when the Sheeting is oriented in a particular manner. Sheeting orientation can be used to easily optimize high entrance angle (>50°) performance when it is required for a given Sign (e.g. “keep right” symbols). In such situations, the completed Sign should have the Sheeting positioned at the 0° orientation (downweb direction perpendicular to the road). When the “primary groove line” (which is oriented parallel to the flat sides of the diamond chain links) is vertical on the completed Sign, Sheeting is said to be in a 0° orientation. When the “primary groove line” is horizontal on the completed Sign, the Sheeting is said to be in a 90° orientation. See Figure 1 for details.



**Figure 1.** Primary groove lines used to define Sheeting orientation.

Unless a Sign’s location and/or position calls for extra-wide entrance angularity performance or a specific installation direction is required in a customer specification, Signs and applied copy (letters, arrows, borders, and shields) can be fabricated and installed using the application orientation that most efficiently utilizes the reflective Sheeting.

**Note:** For multi-panel Signs, it is recommended that all background panels be applied with the Sheeting oriented in the same direction.

Sheeting may be processed into traffic Signs using any of the imaging methods described below. 3M assumes no responsibility for the failures of Sign face legends or backgrounds that have been processed with non-3M process colors or with matched component imaging materials other than those listed below.

## 5 Substrates

Refer to [3M Information Folder 1.7](#) for surface preparation recommendations.

Sheeting has been designed primarily for application to flat substrates. Any application to a substrate with a radius of curvature of less than five inches should also be supported by rivets or bolts. Plastic substrates are not recommended where cold shock performance is required. **Sign failures caused by substrate failures or improper surface preparations are not the responsibility of 3M.**

## 6 Sign Fabrication Methods

### 6.1 Squeeze Roll Application

Sheeting should be applied to Sign substrates at temperatures of 65 °F (18 °C) and higher using either of the following methods:

**Mechanical squeeze roll applicator** – refer to [3M Information Folder 1.4](#). Applications to extrusions that are edge wrapped require sufficient softening of the Sheeting prior to edge wrapping. Softening can be accomplished by directing additional heat to the “next to last” edge roller. This practice may increase productivity and minimize cracking.

**Hand squeeze roll applicator** – refer to [3M Information Folder 1.6](#) for details.

Background and complete Sign applications of Sheeting must be performed using a roll laminator, either mechanical or hand driven.

### 6.2 Hand Application

Hand application is recommended for legend and copy only. Refer to [3M Information Folder 1.5](#) for more details.

Hand applications will show some visual irregularities which may be objectionable to aesthetically critical customers. These irregularities are more noticeable on darker colors. To obtain a uniform close-up appearance, a roll laminator must be used.

All direct applied copy and border **MUST** be cut and squeegeed at all metal joints.

### 6.3 Splices

Sheeting must be butt spliced when more than one piece of Sheeting is used on a single piece of substrate. Sheeting pieces should not touch one another. Avoiding overlap prevents the buckling that can occur as Sheeting expands under extreme temperature and humidity conditions.

### 6.4 Double Faced Signs

The Sheeting on the bottom side of a double faced Sign can be damaged if rolled through a squeeze roll applicator using an unprotected steel bottom roller. The use of a semi-soft flat sheet between the steel roller and the applied Sign face will protect the Sign face from damage. Use of a rubber mat, tag board, or cardboard is recommended.

## 7 Imaging

Sheeting may be processed into traffic Signs using the imaging methods described below. Compatibility is backed with a 3M™ MCS™ Warranty or 3M™ MCS™ Warranty for Traffic when the printing guidelines referred to in the Literature References of Section 15 are followed. See Section 13 of this document for more information regarding the warranties. 3M assumes no responsibility for the failures of Sign face legends or backgrounds that have not been processed according to the [3M Sign Warranty Bulletin](#).

### 7.1 Digital Imaging

Sheeting is compatible with 3M qualified latex inkjet printers and ink systems. Refer to [3M Information Folder 1.17](#) and [HP Large Format Printing Knowledge Center](#) for details. Use of 3M™ ElectroCut™ Film 1170C or 3M™ Premium Protective Overlay Film Series 1160i is required.

### 7.2 Screen Processing

Sheeting may be screen processed into traffic Signs using 3M Process Colors Series 880I or Series 880N before or after mounting onto Sign substrates. Refer to [3M Information Folder 1.8](#) for details. Clear coating is neither required nor recommended. Use of process colors series other than 880I or 880N is not recommended.

### 7.3 3M™ ElectroCut™ Film

3M™ ElectroCut™ Film Series 1170 may be used on Sheeting to provide transparent colored background copy for traffic control Signs. Refer to [3M Product Bulletin 1170](#) for fabrication procedures.

### 7.4 Applying Cut-Out Copy

Diamond Grade™ DG<sup>3</sup> Prismatic Sheeting cut-out copy may be applied to sheeting backgrounds to create Sign legends. Refer to [3M Information Folder 1.10](#) for more information.

## 8 Cutting

Sheeting may be cut into letters and shapes with heights of at least 3 inches and stroke widths of at least ½ inch. Smaller sizes are not recommended. Sealing the cut edges of Sheeting is not required.

### 8.1 Plotter Cutting

- 1 Flat bed plotters can be used to cut Sheeting and offer the most consistent and reliable performance.
- 2 Friction fed plotters can be used to kiss cut only. This is achieved using 600 grams of down force and a 60° cutting blade. Additional drive wheels may be needed to improve tracking. Alternatively, Sheeting can be cut from the liner side. To do so, the blade force and knife depth must be set to score, but not cut through, the top film. After scoring, break apart individual copy or apply premask to retain spacing.

### 8.2 Other Cutting Methods

Sheeting may be hand cut or die cut one sheet at a time. Cutting procedures can be found in [3M Information Folder 1.10](#).

## 9 Installation

Nylon washers are required when twist style fasteners are used to mount Signs

## 10 Shelf-Life, Processing, Storage, Packaging, and Cleaning

Please refer to [3M Information Folder 1.11](#).

## 11 Durability

Please refer to [3M Information Folder 1.7](#). Periodic Sign inspection and regular Sign replacement are strongly recommended in order to help Sign owners establish their own effective service life expectations, beyond the warranty period.

## 12 Health and Safety Information

Read all health hazard, precautionary, and first aid statements found in the Safety Data Sheets (SDS), Article Information Sheets, and products labels of any materials for important health, safety, and environmental information prior to handling or use. To obtain SDSs and Article Information Sheets for 3M products, go to [3M.com/SDS](http://3M.com/SDS), contact 3M by mail, or for urgent requests call 1-800-364-3577.

## 13 Warranty Information

### 13.1 3M Standard Product Warranty

The Sheeting is warranted (“3M Standard Warranty”) to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this product bulletin. If the Sheeting is proven not to have met the 3M Standard Warranty on their shipment date, then a buyer's exclusive remedy, and 3M's sole obligation, at 3M's option, will be refund or replacement of the Sheeting.

### 13.2 3M™ MCS™ Warranty and 3M™ MCS™ Warranty for Traffic

For warranty on digitally printed Sheeting, please refer to the [3M Sign Warranty Bulletin](#).

### 13.3 Disclaimer

THE 3M WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING OR OF PERFORMANCE, CUSTOM, OR USAGE OF TRADE.

### 13.4 Limitation of Liability

Except for the limited remedy stated above, and except where prohibited by law, 3M will not be liable for any loss or damage arising from the Signs or any 3M product, whether direct, indirect, special, incidental, or consequential damages (including but not limited to lost profits, business, or revenue in any way), regardless of the legal theory asserted including warranty, contract, negligence, or strict liability.

## 14 Other Product Information

Always confirm that you have the most current version of the applicable product bulletin, information folder, or other product information from 3M's Website at <http://www.mmm.com/roadsafety>.

## 15 Literature References

<a href="#">3M IF 1.4</a>	Instructions for Interstate Squeeze Roll Applicator
<a href="#">3M IF 1.5</a>	Hand Application Instructions
<a href="#">3M IF 1.6</a>	Hand Squeeze Roll Applicator
<a href="#">3M IF 1.7</a>	Sign Base Surface Preparation
<a href="#">3M IF 1.8</a>	Process Colors Series 880 and 900 Instructions for Use
<a href="#">3M IF 1.10</a>	Cutting, Premasking, and Prespacing
<a href="#">3M IF 1.11</a>	Sign Maintenance Management
<a href="#">3M IF 1.17</a>	User Guide 3M™ Reflective Sheeting and HP Latex 360/365 Printers
<a href="#">3M PB 1160i</a>	3M™ Premium Protective Overlay Film 1160i
<a href="#">3M PB 1170</a>	3M™ ElectroCut™ Film Series 1170
<a href="#">3M PB 880I</a>	3M™ Process Color Series 880I
<a href="#">3M PB 880N</a>	3M™ Process Color Series 880N
<a href="#">3M PB Slipsheeting</a>	3M™ Slipsheeting
<a href="#">3M Sign Warranty Bulletin</a>	
<a href="#">3M™ MCS™ Warranty for Traffic Matrix for ElectroCut™ Film Series 1170</a>	
<a href="#">3M™ MCS™ Warranty for Traffic Matrix for Screen Printed Signs</a>	
<a href="#">3M™ MCS™ Warranty for Traffic Matrix for Unimaged 3M™ Retroreflective Sheeting</a>	
<a href="#">3M™ MCS™ Warranty Matrix for HP Latex 360/365 Printers</a>	
<a href="#">3M™ MCS™ Warranty Matrix for Traffic Matrix HP 360-365</a>	
<a href="#">3M™ MCS™ Warranty Matrix for HP Latex 1500 Printer</a>	
<a href="#">3M™ MCS™ Warranty Matrix for Traffic for HP Latex 1500 Printer</a>	
<a href="#">HP 700, HP 800 Matrix</a>	
<a href="#">HP 700, HP 800 Matrix for Traffic</a>	
<a href="#">HP Large Format Printing Knowledge Center</a>	

ASTM Test Methods are available from ASTM International, West Conshohocken, PA.

## For Information or Assistance

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Transportation Safety Division

# 3M™ Advanced Flexible Engineer Grade Reflective Sheeting Series 7300

Product Bulletin Series 7300  
November 2020

Replaces Product Bulletin Series 7300 Dated March 2020

## 1 Description

3M™ Advanced Flexible Engineer Grade Reflective Sheeting Series 7300 (“Sheeting”) is a non-metallized (corrosion resistant), non-conductive, microprismatic reflective sheeting. As manufactured by 3M, Sheeting meets the performance requirements of ASTM D4956 for Type I sheeting. It has been specially designed to have high scratch resistance and is flexible and durable. The adhesive on the Sheeting has been designed for application to a variety of signing and temporary traffic control devices, including plywood, metal, and both flat and curved reboundable plastic substrates. The Sheeting utilizes a microseal technology that provides a more uniform appearance than its 3M prismatic counterpart, 3M™ Engineer Grade Prismatic Reflective Sheeting Series 3430, and a whiter base color than 3M beaded sheeting. The incorporated microseal technology also makes the Sheeting plotter- and die-cuttable, and eliminates the need for edge sealing. The Sheeting features microprismatic optics that return light to drivers under a diverse set of nighttime viewing geometries that are encountered by the driving public. When applied to properly prepared substrates, the Sheeting provides long-term reflectivity and durability. White Sheeting has been designed for use in the production of retroreflective commercial signs, regulated and non-regulated traffic control signs that are exposed vertically in service, and pressure sensitive stickers.

The Sheeting is available in the colors and for the applications indicated in Table 1.

**Table 1. Product codes and application compatibilities by color.**

Color	Product Code	Temporary Traffic Control Devices and Signs	Regulated and Non-Regulated Traffic Control Signs and Stickers
White	7310	✓	✓
Yellow	7311	✓	
Orange	7314	✓	
White/Orange 4" Stripe Barricade L/R	7334L/7334R	✓	
White/Orange 6" Stripe Barricade L/R	7336L/7336R	✓	

## 2 Specifications

### 2.1 Coefficient of Retroreflection and Chromaticity

Minimum performance coefficient of retroreflection ( $R_A$ ) values are presented in Table 2.

**Table 2. Minimum coefficient of retroreflection,  $R_A$ , cd/ft<sup>2</sup> (cd/lx/m<sup>2</sup>) per ASTM D4956 for Type I signing. Measurements taken according to ASTM E810.**

Observation Angle <sup>a</sup> (°)	Entrance Angle <sup>b</sup> (°)	White	Yellow	Orange
0.2	-4	70	50	25
0.2	+30	30	22	7
0.5	-4	30	25	13
0.5	+30	15	13	4

a. Observation Angle - The angle between the illumination axis and the observation axis.

b. Entrance Angle - The angle from the illumination axis to the retroreflector axis. The retroreflector axis is an axis perpendicular to the retroreflective surface.

Color specification limits and daytime luminance factor (Y%) data for Sheeting are presented in Table 3.

**Table 3. Color specification limits (daytime).**

Color	x	y	x	y	x	y	x	y	Daytime Luminance Factor (Y%)	
									Min.	Max
White	.303	.300	.368	.366	.340	.393	.274	.329	27	-
Yellow	.498	.412	.557	.442	.479	.520	.438	.472	15	45
Orange	.558	.352	.636	.364	.570	.429	.506	.404	14	30

## 3 Substrates

The most reliable and durable traffic devices and signs are made from properly prepared substrates. Refer to [3M Information Folder 1.7](#) for surface preparation recommendations.

### 3.1 Regulated and Non-Regulated Signs (White Sheeting Only)

For regulated and non-regulated traffic sign use, the substrates found to be most reliable and durable are properly prepared aluminum sheets and extrusions. Users are urged to carefully evaluate all other substrates for adhesion and sign durability. Other substrates suitable for secure and durable applications of Sheeting have the following characteristics:

- o Clean
- o Smooth
- o Flat

- o Rigid
- o Dimensionally stable
- o Weather resistant
- o Non-porous
- o High surface energy (pass water break test)

### 3.2 Temporary Traffic Control Devices and Signs

Refer to [3M Information Folder 1.7](#) for surface preparation recommendations. Substrates with low surface energies may require additional preparation steps, such as flame treatment, mechanical abrasion, or use of adhesion promoters, prior to Sheeting application.

Sheeting failures caused by substrate failures or improper surface preparations are not the responsibility of 3M. User is responsible for determining whether Sheeting is suitable for a particular purpose and application. It is up to the user to determine if a substrate is appropriate for a specific purpose and users are urged to carefully evaluate all substrates for adhesion and device durability prior to application.

## 4 Application

### 4.1 Pressure Sensitive Adhesive

The Sheeting utilizes a pressure sensitive adhesive that has been specially designed to retain adhesion over a wide temperature range and for application to a broad range of surfaces, and although not optimal, may even include moderately rough or porous wood, plastic, and a variety of metal surfaces.

For optimal adhesion, Sheeting should be applied to substrates at room temperature, 65 °F (18 °C), or higher using any of the methods described below. If Sheeting temperature is lower than 65 °F (18 °C), acclimatize it at a temperature of 65 °F (18 °C) or greater for at least 24 hours before application.

### 4.2 Application Equipment

- 1 48" Interstate Squeeze Roll Applicator (see [3M Information Folder 1.4](#))
- 2 Hand Squeeze Roll Applicator (HSRA) (see [3M Information Folder 1.6](#))

Note: When using a HSRA with an air cylinder kit, apply the minimum tension needed to properly position the Sheeting on the substrate. A nip roller pressure of 80 psi is recommended for a 48 inch laminator.

### 4.3 Hand Application

Hand application is recommended for copy only. See [3M Information Folder 1.5](#) for detailed hand application instructions. Hand applications may result in visual irregularities that may be aesthetically objectionable to some users. Irregularities are more noticeable on darker colors. To obtain a close-up uniform appearance, a roll laminator must be used.

All direct applied copy and border MUST be cut at all panel seams and squeegeed at all joints. Use a squeegee with a low-friction sleeve and change the sleeve often.

### 4.4 Other Application Methods

Customized application equipment exists for a wide range of flat and curved substrate surfaces. The Sheeting has been found to be compatible with a variety of customized application equipment. Please contact your 3M representative for more information.

### 4.5 Splices

The Sheeting may be either butt spliced or overlap spliced when more than one piece of Sheeting is used on a single piece of substrate.

## 5 Regulated and Non-Regulated Sign Installation (White Sheeting Only)

Nylon washers are required when twist style fasteners are used to mount the sign.

## 6 Imaging by Screen Printing

Screen print Sheeting using 3M's system of matched component materials (Table 4). Process at a temperature of 65–100 °F (18–38 °C) and at a relative humidity of 20–50%. It is the user's responsibility to determine the suitabilities and durabilities of any other process colors. 3M assumes no responsibility for the premature failures of sign face legends that have been processed with non-recommended or non-3M process colors. Since 3M has no control over colors made by other manufacturers, the user should check with the process color manufacturer for processing recommendations and assurance of performance prior to any extensive use. To screen process regulated and non-regulated signs, a P.E. 157 screen mesh screened with a fill pass is recommended. Clear coating is neither required nor recommended. Consult [3M Information Folder 1.8](#) for details.

Table 4. 3M system of matched component materials.

Matched Components	
Process Color	Series 880N, Series 880I, or Series 990
Slipsheet	SCW 568
Prespacing Tape	SCPS-2
Premasking Tape	SCPM-3
Transfer Tape	TPM-5

Applications other than vertical exposure on stationary objects may have a negative effect on durability. Periodic sign inspection and regular sign replacement are strongly recommended.

## 7 Imaging by Digital Processing

Digitally imaged areas of white Sheeting that have been processed according to 3M instructions shall provide coefficients of retroreflection of not less than 70% of the values of the corresponding ASTM D4956 Type I sheeting colors. The daytime luminance and chromaticity shall conform to ASTM D4956 tables 2 and 11, respectively.

Conformance to the ASTM D4956 performance requirements for Type I sheeting has been established when 3M printing requirements and procedures are followed. Most consistent results are achieved when 3M's system of matched component materials (Tables 5 and 6) are used.

Use of Sheeting is not restricted to the inks/ printers listed below. Sheeting may perform adequately with select latex, solvent and UV ink jet inks and printers. Please contact your 3M representative for more information on ink and print system compatibilities.

Table 5. Matched components and color availability for permanent regulated or non-regulated traffic control signs and stickers.

3M Digital Printing Solutions <sup>a</sup>	Traffic Colors	Ink
Durst Rho 161TS Durst Rho 162TS	Red, blue, green, brown, yellow, and black	3M™ Piezo Inkjet Series 8800UV Ink
Durst Rho 163	Red, blue, green, brown, yellow, and black	3M™ Piezo Inkjet Series 8900UV Ink
EFI H1625-RS	Red, blue, green, brown, yellow, and black	3M™ Piezo Inkjet Series 8900UV Ink
HP 360/365	Red, green, brown, and black	HP Series 831/871 Inkjet inks
Overlay Film (REQUIRED)	3M™ ElectroCut™ Film, Series 1170	

a. Must be printed according to the requirements including printer settings and profiles given in printer specific product bulletins.

**Table 6. Matched components and color availability for temporary traffic control signs.**

3M Digital Printing Solutions <sup>a</sup>	Traffic Colors	Ink
Durst Rho 161TS Durst Rho 162TS	Black	3M™ Piezo Inkjet Series 8800UV Ink
Durst Rho 163		3M™ Piezo Inkjet Series 8800UV Ink
EFI H1625-RS		3M™ Piezo Inkjet Series 8800UV Ink
HP 360/365		HP Series 831/871 Inkjet inks
Overlay Film	Not required for temporary traffic control signs	

a. Must be printed according to the requirements including printer settings and profiles given in printer specific product bulletins.

## 8 Cutting Methods

The Sheeting may be cut into letters and shapes for direct applied copy. The Sheeting does not require edge sealing.

### 8.1 Plotter Cutting

The plotter cutting procedure used for Sheeting is similar to that used for typical beaded engineer grade sheeting. Start with the cutter settings typically used for beaded engineer grade sheeting and adjust as necessary. Slight adjustments in down force and knife depth may be required.

### 8.2 Premasking/Prespacing Markings

When premasking/prespacing with paper tape, use Prespacing Tape SCPM-2 or Application Tape SCPM-3. When premasking/prespacing with transparent tape, use Application Tape TPM-5.

### 8.3 Other Cutting Methods

Users are encouraged to evaluate cutting procedures for their own equipment and shop conditions. Sheeting may be hand cut, die cut, plotter cut, or guillotined multiple sheets at a time. The Sheeting may be cut into any desired shape, including cone sleeves. The cut edges of Sheeting do not require sealing. Details regarding cutting methods can be found in [3M Information Folder 1.10](#).

## 9 Fabrication Lines

The Sheeting manufacturing process results in repeating fabrication lines in the product, as illustrated in Figure 1. The lines repeat at the same interval throughout the roll. Fabrication lines may be noticeable in some situations but should not impact sign functionality on the road, either in daylight or at night, under typical use conditions.

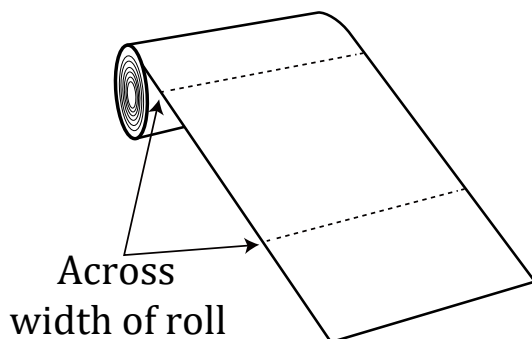


Figure 1. Fabrication lines.

## 10 Cleaning

Devices and signs that require cleaning should be flushed with water then washed with a detergent solution and soft bristle brush or sponge. Avoid pressure that may damage the device or sign face. Flush with water following washing. Do not use solvents to clean signs. See in [3M Information Folder 1.10](#) for further details.

## 11 Storage and Packaging

Sheeting should be stored in a cool, dry area, preferably at a temperature of 65–75 °F (18–24 °C) and a relative humidity of 30–50%, and be applied within two years of date of receipt. Rolls should be stored horizontally in their shipping cartons. Partially used rolls should be returned to their shipping cartons or suspended horizontally from rods or pipes through their cores. Unprocessed sheets should be stored flat. Refer to [3M Information Folder 1.11](#) for instructions on packing for storage and shipment.

### 11.1 Special Instructions for Regulated and Non-Regulated Signs (White Only)

Finished signs and applied blanks should be stored on edge. Processed sign faces must be protected with SCW 568 slipsheet paper. Place the glossy side of the slipsheet against the sign face. Double faced signs must have the glossy side of a slipsheet against each face of the sign.

Unmounted sign faces must be stored flat and interleaved with SCW 568 slipsheet, glossy side against the sign face.

Avoid banding, crating, or stacking signs. Package for shipment in accordance with commercially accepted standards to prevent movement and chafing. Store sign packages indoors on edges.

Panels and finished signs must remain dry during shipment and storage. If packaged signs become wet, unpack immediately and allow signs to dry. Refer to [3M Information Folder 1.11](#) for instructions on packing for storage and shipment.

## 12 Durability

The durability of a Sheeting application will depend upon substrate selection and preparation, compliance with recommended application procedures, geographic area, exposure conditions, and maintenance practices. Maximum durability can be expected in applications subject to vertical exposures on stationary objects when processed and applied to properly prepared substrates according to 3M recommendations available in [3M Information Folder 1.7](#). The user must determine the suitability of any substrate for its intended use. Exposure to severe or unusual conditions and applications to unprimed, excessively rough, or non-weather-resistant surfaces can reduce durability.

The durability statements contained herein do not constitute warranties of quality, life, or characteristics. Purchaser should perform appropriate tests to determine if Sheeting meets their performance requirements when applied to reboundable plastic substrates. Tests should incorporate plastic manufacturer's recommendations for impacting reboundable plastic traffic control devices.

### 12.1 Durability Considerations for Signing Applications

When 3M's system of matched component materials (Table 4) are used, depending upon the substrate selection and preparation, compliance with recommended application procedures, geographic area, exposure conditions, and maintenance.

Applications other than vertical exposure on stationary objects may reduce durability. Periodic sign inspection and regular sign replacement are strongly recommended.

### 12.2 Durability Considerations for Work Zone Construction Signs

Work zone construction signs are exposed to severe or unusual conditions and are considered to be nonstationary objects which could result in reduced durability compared to permanent sign applications.

## 12.3 Exposure Considerations

Exposure to severe or unusual conditions can shorten Sheeting lifetime. Signs in mountainous areas that are covered by snow for prolonged periods may also have reduced durability. Atmospheric conditions in certain geographic areas may have a negative effect on durability.

## 12.4 Custom Process Colors Considerations

Custom colors may have reduced durability compared to regulated traffic colors.

# 13 Health and Safety Information

Read all health hazard, precautionary, and first aid statements found in the Safety Data Sheets (SDS) and Article Information Sheets for important health, safety, and environmental information. To obtain SDSs and Article Information Sheets for 3M products, go to [3M.com/SDS](http://3M.com/SDS), contact 3M by mail, or for urgent requests call 1-800-364-3577.

# 14 Warranty Information

## 14.1 3M Basic Warranty

3M warrants to the user that, at the time of shipment, the Sheeting will (a) be free of defects in materials and (b) manufacture and meet the specifications stated in this product bulletin ("3M Basic Warranty").

## 14.2 Exclusive Limited Remedy

If Sheeting is proven not to have met the 3M Basic Warranty on its shipment date, then a user's exclusive remedy, and 3M's sole obligation, at 3M's option, will be refund or replacement of the Sheeting.

## 14.3 Disclaimer

THE 3M WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING OR OF PERFORMANCE, CUSTOM, OR USAGE OF TRADE.

## 14.4 Limitation of Liability

Except where prohibited by law, 3M SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE TO USER, INCLUDING WITHOUT LIMITATION, TTC AND SIGN MANUFACTURER, FOR ANY DIRECT (EXCEPT FOR THE EXCLUSIVE LIMITED REMEDY PROVIDED IN SECTION 14.2), INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING BUT NOT LIMITED TO, LABOR, NON-3M MATERIAL CHARGES, LOSS OF PROFITS, REVENUE, BUSINESS OPPORTUNITY, OR GOODWILL) RESULTING FROM OR IN ANY WAY RELATED TO THE SHEETING, SERVICES, OR THIS BULLETIN. This limitation of liability applies regardless of the legal theory asserted including warranty, contract, negligence, or strict liability.

# 15 Other Product Information

Always confirm that you have the most current version of the applicable product bulletin, information folder, or other product information from 3M's Website at [3M.com/roadsafety](http://3M.com/roadsafety).

# 16 Literature References

<a href="#">3M IF 1.4</a>	Instructions for Interstate Squeeze Roll Applicator
<a href="#">3M IF 1.5</a>	Hand Application Instructions
<a href="#">3M IF 1.6</a>	Hand Squeeze Roll Applicator
<a href="#">3M IF 1.7</a>	Sign Base Surface Preparation
<a href="#">3M IF 1.8</a>	Process Color Instructions

<a href="#">3M IF 1.10</a>	<b>Cutting, Premasking, and Prespacing</b>
<a href="#">3M IF 1.11</a>	<b>Reflective Sheeting Sign Maintenance Management</b>
<a href="#">3M IF 3.3</a>	<b>Procedures for Applying Reflective Sheeting to Reboundable Traffic Control Devices</b>
<a href="#">3M PB 880I</a>	<b>3M™ Process Color Series 880I</b>
<a href="#">3M PB 880N</a>	<b>3M™ Process Color Series 880N</b>
<a href="#">3M PB 990</a>	<b>3M™ Process Color Series 990</b>
<a href="#">3M PB 1170</a>	<b>3M™ ElectroCut™ Film Series 1170</b>
<a href="#">8800UV</a>	<b>3M™ Piezo Inkjet Ink Series 8800UV</b>
<a href="#">8900UV</a>	<b>3M™ Piezo Inkjet Series 8900UV Ink</b>

ASTM Test Methods are available from ASTM International, West Conshohocken, PA.

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All statements, technical information and recommendations contained herein are based on tests we believe to be reliable at the time of this publication, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, or conditions express or implied. Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct, indirect, special, or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his/her intended use, and user assumes all risk and liability whatsoever in connection therewith. Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.



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St. Paul, MN 55144-1000 USA

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### 2100 Series | – Premium High Performance Cast Vinyl Film

Lumina series 2100 is a premium quality, flexible, solid and metallic opaque gloss vinyl film designed for use in architectural signage, striping, transportation graphics and general sign markings. This series offers exceptional value for applications requiring extended durability. To order punched material, use part number 2200.

**Film Technology** | Cast (PVC)

**Film Thickness** | 2 mil

**Color** | Variety of solid and metallic colors – see color chart.

**Outdoor Durability** | 9 years (solid colors), 6 years (metallic colors)

**Finish** | Gloss

**Blockout** | No

**Adhesive** | Clear permanent (Acrylic)

**Liner** | 78#

**Conformability** | Curves, Rivets, Corrugations, and Flat Surfaces

**Shelf Life** | 2 years

<u>CUTTING</u>	<u>PRINTING</u>	<u>INSTALLATION</u>
<b>Computer Cut</b>   Yes <b>Steel Rule</b>   Yes <b>Thermal Die</b>   yes <b>Flat Bed</b>   Yes <b>Sheetable</b>   Yes <b>Laminate</b>   yes/cold	<b>Thermal Transfer</b>   Yes <b>Solvent</b>   No <b>Eco-Solvent</b>   No <b>Latex</b>   No <b>UV</b>   No <b>Screen</b>   Yes	<b>Wet Apply</b>   Yes <b>Min. App. Temp.</b>   40°F (Optimum 60 degrees) <b>Interior / Exterior</b>   Yes

<p><b><u>FILM</u></b></p> <ul style="list-style-type: none"> <li>• <b>Film Thickness</b>__ (mils/μm) .002 inches</li> <li>• <b>Film Weight</b>__ (gsm) N/A</li> <li>• <b>Gloss</b>__ (60°) &gt;80</li> <li>• <b>Opacity</b>__ (%) &gt; 80</li> <li>• <b>Tensile Strength</b>__ (lbs/in) 2.5</li> <li>• <b>Elongation</b>__ (%) &gt;120</li> <li>• <b>Dimensional Stability</b>__ (48 Hrs @ 160 F) 0.01 in</li> </ul>	<p><b><u>ADHESIVE</u></b></p> <ul style="list-style-type: none"> <li>• <b>Adhesive Type</b>__ Permanent Acrylic</li> <li>• <b>Adhesive Thickness</b>__ 1 mil</li> <li>• <b>Adhesive Color</b>__ Clear/White</li> <li>• <b>Peel Strength</b>__ (lbs/in) 4.0</li> </ul>
<p><b><u>LINER</u></b></p> <ul style="list-style-type: none"> <li>• <b>Liner Weight</b>__ (#/gsm) 78#</li> <li>• <b>Liner Type</b>__ White 2-Sided PE-Coated Kraft</li> <li>• <b>Liner Thickness</b>__ (mils/μm) 4.8</li> <li>• <b>Release Force</b>__ @ 12"/min (g/2") 50</li> </ul>	<p><b><u>PERFORMANCE GUIDANCE</u></b></p> <ul style="list-style-type: none"> <li>• <b>Application Temp.</b>__ &gt; +40 °F</li> <li>• <b>Service Temp.</b>__ -50 °F to +225 °F</li> <li>• <b>Shelf Life</b>__ 2 years</li> <li>• <b>Storage Temp.</b> / Rel. Humidity__ 73 °F / 50%</li> <li>• <b>Outdoor Durability</b>__ 6 to 9 years</li> <li>• <b>Removability</b>__ 1 year without residue</li> </ul>

NOTE - For further information regarding printing, substrate cleaning, application, maintenance, durability, and removal please review the corresponding instructional bulletin available at [fdcfilms.com](http://fdcfilms.com).

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<MA>

Commercial Branding and Transportation Division

# 3M™ High Intensity Prismatic Reflective Sheeting Series 3930

Product Bulletin Series 3930  
October 2023

Replaces Product Bulletin Series 3930 Dated March 2023

## 1 Description

3M™ High Intensity Prismatic Reflective Sheeting Series 3930 (“**Sheeting**”) is a reflective prismatic sheeting designed for use in the production of durable reflective traffic control and guidance signs (“**Signs**”) that are exposed vertically in service.

For details of the features and benefits of Sheeting, please refer to the 3M Commercial Branding and Transportation Division website (<http://www.3M.com/roadsafety/>).

The Sheeting is available in the following colors.

**Table 1.** Product codes by color.

Color	Product Code
White	3930
Yellow	3931
Red	3932
Orange	3934
Blue	3935
Green	3937
Brown	3939

## 2 Specifications

The Sheeting conforms to all current performance requirements of ASTM D4956 for Type III and Type IV retroreflective sheeting. Refer to section 7 for information regarding imaging of Sheeting.

## 3 System of Matched Components

For a complete list of matched components for the Sheeting, please see the [3M™ Sign Warranty Bulletin](#).

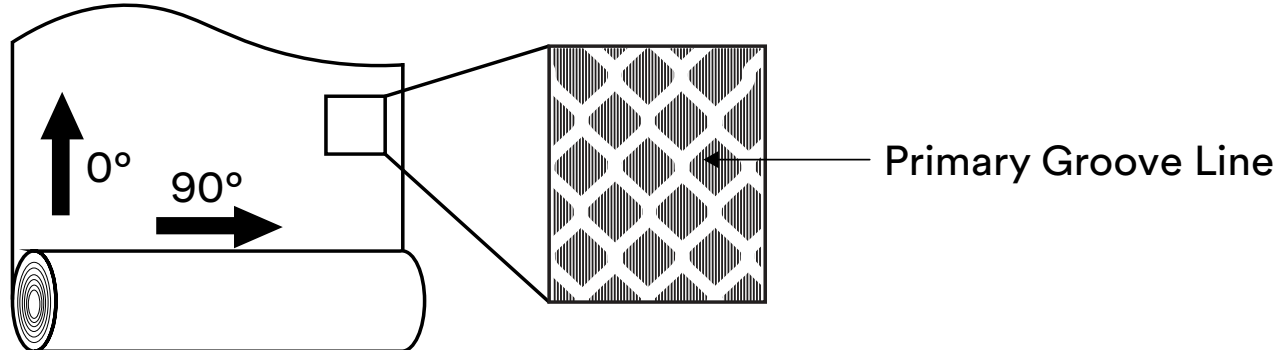
## 4 Physical Properties

### 4.1 Adhesive

Sheeting has a pressure-sensitive adhesive that is recommended for application at temperatures of 65 °F (18 °C) and higher. Meets ASTM D4956 Class I adhesive requirement.

### 4.2 Entrance Angularity Performance with Respect to Orientation

Sheeting has been designed to be an effective wide angle reflective sheeting regardless of its orientation on the substrate or the ultimate orientation of the Sign after installation. However, because the efficiency of light return from cube corner reflectors is not equal at all application orientations, especially at higher entrance angles, it is possible to get the widest entrance angle light return when the Sheeting is oriented in a particular manner. Sheeting orientation can be used to easily optimize high entrance angle (>50°) performance when it is required for a given Sign (e.g. “keep right” symbols). In such situations, the completed Sign should have the Sheeting positioned at the 0° orientation (downweb direction perpendicular to the road). When the “primary groove line” (which is oriented parallel to the flat sides of the diamond chain links) is vertical on the completed Sign, Sheeting is said to be in a 0° orientation. When the “primary groove line” is horizontal on the completed Sign, the Sheeting is said to be in a 90° orientation. See Figure 1 for details.



**Figure 1.** Primary groove lines used to define Sheeting orientation.

Unless a Sign’s location and/or position calls for extra-wide entrance angularity performance or a specific installation direction is required in a customer specification, Signs and applied copy (letters, arrows, borders, and shields) can be fabricated and installed using the application orientation that most efficiently utilizes the reflective Sheeting.

**Note:** For multi-panel Signs, it is recommended that all background panels be applied with the Sheeting oriented in the same direction.

## 5 Substrates

Refer to [3M Information Folder 1.7](#) for surface preparation recommendations.

Sheeting has been designed primarily for application to flat substrates. Any application to a substrate with a radius of curvature of less than five inches should also be supported by rivets or bolts. Plastic substrates are not recommended where cold shock performance is required. **Sign failures caused by substrate failures or improper surface preparations are not the responsibility of 3M.**

## 6 Sign Fabrication Methods

### 6.1 Squeeze Roll Application

Sheeting should be applied to Sign substrates at temperatures of 65 °F (18 °C) and higher using either of the following methods:

**Mechanical squeeze roll applicator** – refer to [3M Information Folder 1.4](#). Applications to extrusions that are edge wrapped require sufficient softening of the Sheeting prior to edge wrapping. Softening can be accomplished by directing additional heat to the “next to last” edge roller. This practice may increase productivity and minimize cracking.

**Hand squeeze roll applicator** – refer to [3M Information Folder 1.6](#) for details.

Background and complete Sign applications of Sheeting must be performed using a roll laminator, either mechanical or hand driven.

### 6.2 Hand Application

Hand application is recommended for legend and copy only. Refer to [3M Information Folder 1.5](#) for more details.

Hand applications are more likely to show visual irregularities that may be objectionable to aesthetically critical customers. These irregularities are more noticeable on darker colors. To obtain a uniform close-up appearance, a roll laminator must be used.

All direct applied copy and border **MUST** be cut and squeegeed at all metal joints.

### 6.3 Splices

Sheeting must be butt spliced when more than one piece of Sheeting is used on a single piece of substrate. Sheeting pieces should not touch one another. Avoiding overlap prevents the buckling that can occur as Sheeting expands under extreme temperature and humidity conditions.

### 6.4 Double Faced Signs

The Sheeting on the bottom side of a double faced Sign can be damaged if rolled through a squeeze roll applicator using an unprotected steel bottom roller. The use of a semi-soft flat sheet between the steel roller and the applied Sign face will protect the Sign face from damage. Use of a rubber mat, tag board, or cardboard is recommended.

## 7 Imaging

Sheeting may be processed into traffic Signs using the imaging methods described below. Compatibility is backed with a 3M™ MCS™ Warranty or 3M™ MCS™ Warranty for Traffic when the printing guidelines referred to in the Literature References of Section 15 are followed. See Section 13 of this document for more information regarding the warranties. 3M assumes no responsibility for the failures of Sign face legends or backgrounds that have not been processed according to the [3M Sign Warranty Bulletin](#).

### 7.1 Digital Imaging

Sheeting is compatible with 3M qualified latex inkjet printers and ink systems. Refer to [3M Information Folder 1.17](#) and [HP Large Format Printing Knowledge Center](#) for details. Use of 3M™ ElectroCut™ Film 1170C or 3M™ Premium Protective Overlay Film Series 1160i is required.

### 7.2 Screen Processing

Sheeting may be screen processed into traffic Signs using 3M™ Process Colors Series 880I or 3M™ Process Colors Series 880N before or after being mounted onto a substrate. Refer to [3M Information Folder 1.8](#) for details. Clear coating is neither required nor recommended. Use of process color series other than 880I or 880N is not recommended.

### 7.3 3M™ ElectroCut™ Film

3M™ ElectroCut™ Film Series 1170 may be used on Sheeting to provide transparent colored background copy for traffic control Signs. Refer to [3M Product Bulletin 1170](#) for fabrication procedures.

### 7.4 Applied Cut-Out Copy

Sheeting cut-out copy may be applied to Sheeting backgrounds to create Sign legends. Refer to [3M Information Folder 1.10](#) for more information.

## 8 Cutting

Sheeting may be cut into letters and shapes with heights of at least 3 inches and stroke widths of at least ½ inch. Smaller sizes are not recommended. Sealing the cut edges of Sheeting is not required.

### 8.1 Plotter Cutting

- 1 Flat bed plotters can be used to cut Sheeting and offer the most consistent and reliable performance.
- 2 Friction fed plotters can be used to kiss cut only. This is achieved using 600 grams of down force and a 60° cutting blade. Additional drive wheels may be needed to improve tracking. Alternatively, Sheeting can be cut from the liner side. To do so, the blade force and knife depth must be set to score, but not cut through, the top film. After scoring, break apart individual copy or apply premask to retain spacing.

### 8.2 Other Cutting Methods

Sheeting may be hand cut or die cut one sheet at a time. Cutting procedures can be found in [3M Information Folder 1.10](#).

## 9 Installation

Nylon washers are required when twist style fasteners are used to mount Signs.

## 10 Shelf-Life, Processing, Storage, Packaging, and Cleaning

Please refer to [3M Information Folder 1.11](#).

## 11 Durability

Please refer to [3M Information Folder 1.7](#). Periodic Sign inspection and regular Sign replacement are strongly recommended in order to help Sign owners establish their own effective service life expectations, beyond the warranty period.

## 12 Health and Safety Information

Read all health hazard, precautionary, and first aid statements found in the Safety Data Sheets (SDS), Article Information Sheets, and products labels of any materials for important health, safety, and environmental information prior to handling or use. To obtain SDSs and Article Information Sheets for 3M products, go to [3M.com/SDS](#), contact 3M by mail, or for urgent requests call 1-800-364-3577.

## 13 Warranty Information

### 13.1 3M Standard Product Warranty

The Sheeting is warranted (“3M Standard Warranty”) to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this product bulletin. If the Sheeting is proven not to have met the 3M Standard Warranty on their shipment date, then a buyer’s exclusive remedy, and 3M’s sole obligation, at 3M’s option, will be refund or replacement of the Sheeting.

## 13.2 3M™ MCS™ Warranty and 3M™ MCS™ Warranty for Traffic

For warranty on digitally printed Sheeting, please refer to the [3M Sign Warranty Bulletin](#).

### 13.3 Disclaimer

THE 3M WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING OR OF PERFORMANCE, CUSTOM, OR USAGE OF TRADE.

### 13.4 Limitation of Liability

Except for the limited remedy stated above, and except where prohibited by law, 3M will not be liable for any loss or damage arising from the Signs or any 3M product, whether direct, indirect, special, incidental, or consequential damages (including but not limited to lost profits, business, or revenue in any way), regardless of the legal theory asserted including warranty, contract, negligence, or strict liability.

## 14 Other Product Information

Always confirm that you have the most current version of the applicable product bulletin, information folder, or other product information from 3M's Website at <http://www.3M.com/roadsafety>.

## 15 Literature References

<a href="#">3M IF 1.4</a>	Instructions for Interstate Squeeze Roll Applicator
<a href="#">3M IF 1.5</a>	Hand Application Instructions
<a href="#">3M IF 1.6</a>	Hand Squeeze Roll Applicator
<a href="#">3M IF 1.7</a>	Sign Base Surface Preparation
<a href="#">3M IF 1.8</a>	Process Colors Series 880 and 900 Instructions for Use
<a href="#">3M IF 1.10</a>	Cutting, Premasking, and Prespacing
<a href="#">3M IF 1.11</a>	Sign Maintenance Management
<a href="#">3M IF 1.17</a>	User Guide 3M™ Reflective Sheeting and HP Latex 360/365 Printers
<a href="#">3M PB 880I</a>	3M™ Process Color Series 880I
<a href="#">3M PB 880N</a>	3M™ Process Color Series 880N
<a href="#">3M PB 1160i</a>	3M™ Premium Protective Overlay Film 1160i
<a href="#">3M PB 1170</a>	3M™ ElectroCut™ Film Series 1170
<a href="#">3M PB Slipsheeting</a>	3M™ Slipsheeting
<a href="#">3M Sign Warranty Bulletin</a>	
<a href="#">3M™ MCS™ Warranty for Traffic Matrix for ElectroCut™ Film Series 1170</a>	
<a href="#">3M™ MCS™ Warranty for Traffic Matrix for Screen Printed Signs</a>	
<a href="#">3M™ MCS™ Warranty for Traffic Matrix for Unimaged 3M™ Retroreflective Sheeting</a>	
<a href="#">3M™ MCS™ Warranty Matrix for HP Latex 360/365 Printers</a>	
<a href="#">3M™ MCS™ Warranty for Traffic Matrix HP 360-365</a>	
<a href="#">3M™ MCS™ Warranty Matrix for HP Latex 1500 Printer</a>	
<a href="#">3M™ MCS™ Warranty Matrix for Traffic for HP Latex 1500 Printer</a>	
<a href="#">HP 700, HP 800 Matrix</a>	
<a href="#">HP 700, HP 800 Matrix for Traffic</a>	

[HP Large Format Printing Knowledge Center](#)

ASTM Test Methods are available from ASTM International, West Conshohocken, PA.

## For Information or Assistance

Call: 1-800-553-1380

In Canada Call:

1-800-3M HELPS (1-800-364-3577)

## Internet:

<http://www.3M.com/roadsafety>

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### Important Notice

All statements, technical information and recommendations contained herein are based on tests we believe to be reliable at the time of this publication, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, or conditions express or implied. Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss, or damage, direct, indirect, special, or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his/her intended use, and user assumes all risk and liability whatsoever in connection therewith. Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.



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