

**Defense and Law Enforcement and Security and Safety Equipment and Supplies UNSPSC CODE : 46000000**

**Public safety and control UNSPSC CODE : 46160000**

**Traffic control UNSPSC CODE : 46161500**

**Commodity : Retro Reflective Caution Indicator Board UNSPSC CODE : 46161502  
Selling Unit : Piece**

S.No.	Parameters	Type	Value 1	Value 2	Value 3	Validation	Unit	M	F	G	Demand aggregation
<b>Physical Characteristics</b>											
1	KRPL No 75407014	CH	YES					√			
2	Visibility approx,(m)	N						√	√	√	
3	Message/Border	CH	All signboard shall have the border,symbols,numerals and lettets screen-printed. Cut outs and joints on the signboards are not accepted. The screen-printing process colours shall also be guaranted to perform for ten year and screen-printing shall be done as per manufacturer's recommended practice. The border, symbols,numerals and letters shall be as per IRPW manual.					√			
4	Finished board	CH	The finished signboard shall have the whole front face covered with complete reflective sheeting without joints and shall have no portion on the front face covered with paint or any material other than reflective sheeting. The material should cover the board surface evenly and shall be free from twists, crack and folds.					√			

5	Back support frame	CH	All signboard shall back support angle iron frames of size 25X25X3 mm duly rivetted with solid M.S.rivets at corners and solid aluminium rivets in between. Pop rivets are not allowed. The angle iron frame shall have two brackets of size 25X25X3 mm of 75 mm long with four holes of 12 mm dia. for fixing the boards to posts. All signboards shall have zinc plates M.S.rivets of 5 mm dia at the corners and solid aluminium rivets of 5 mm dia. in between.					√			
6	Siting of signs	CH	Proper placement of signboard can greatly enhance the effectiveness of an installation. Sign face should always be oriented to minimum specular reflection. The signboard shall be tilted at 3 degree away from vertical. Decisions on the placement of sign should be related to the site conditions.					√			
7	Fixing of signboards	CH	The signboards shall be fixed to posts with bolts,nuts, and washers. All bolts, nuts, and washers shall be electro plates. All bolts shall be of 10 mm dia and 30 mm long zinc electro plated with suitable nuts and washers.					√			
<b>Material</b>											
8	Material	EN	This board should be made of Aluminium alloy sheet confirming to IS-736 material designated 24345 or 19000					√			

Dimension										
9	Thickness,(Min),(mm)	N				>2		√	√	
10	Length,(mm)	N	1400					√		
11	Width,(mm)	N	400					√		
Shape and Design										
12	Shape	CH	Rectangular					√		
13	Design type	CH	Standard	The configuration of board should conform to drawing given in Annexure 8/4 – Para 807 & 808 of Indian Railways Permanent Way Manuals 2004 Edition				√	√	
Colour										
14	Board colour with back ground	CH	Yellow					√		
15	Word "Caution" is written in colour	CH	Black					√		
16	The colour scheme for signs for background, border, symbols,letter,numerals,etc. shall be as per IRPW manual	CH	YES					√		

Guarantee										
17	The signboard with retro-reflective high intensity prismatic grade sheeting in exposed condition shall have an effective performance life of ten year. A guarantee to this effect shall be furnished by the manufacturer in original.	N	YES					√		
Test Certificate Requirement										
18	Certificate from manufacturer of sheeting of having tested the sheeting from reputed laboratory in an unprotected outdoor exposure facing the sun for two year at the time of initial development of material and having passed the tests. The certificate shall be submitted to the buyers on demand.	CH	YES					√		
19	Copy of test certificate from manufacturer of sheeting for retro-reflectance and weather resistance done at the time of initial development of material A copy of the test certificate, done originally on the product (retro-reflective sheet) at the time of initial development of material by an independent test house, for the retro-reflectance values and weather resistance test determined in accordance with ASTM standard E:810 and ASTM D-4956-09 respectively and a certificate from the manufacturer of the sheeting stating that since this testing of the sheeting there has neither been any significant change in the manufacturing process of the sheeting nor any ingredient has changed and hence the test results supplied by him as above are valid for the current lot also. The certificate shall be submitted to the buyers on demand.	CH	YES					√		

20	<p>Certificate from manufacturer regarding no significant change in manufacturing process after initial development of material A copy of the test certificate, done originally on the product (retro-reflective sheet) at the time of initial development of material by an independent test house, for the retro-reflectance values and weather resistance test determined in accordance with ASTM standard E:810 and ASTM D-4956-09 respectively and a certificate from the manufacturer of the sheeting stating that since this testing of the sheeting there has neither been any significant change in the manufacturing process of the sheeting nor any ingredient has changed and hence the test results supplied by him as above are valid for the current lot also. The certificate shall be submitted to the buyers on demand.</p>	CH	YES					√			
21	<p>Copy of test results for the particular lot of supply of sheeting conforming the specification requirements with a certificate from manufacturer A certificate from the manufacturer of the retro-reflective sheeting that the material being supplied under the purchase order has been tested and is conforming to the standards specified for the sheeting. This certificate should be accompanied with a copy of the test results of the particular lot for retro- reflectance of the sheeting determined in accordance with ASTM standard E:810, and Color of retro-reflective sheeting Adhesion, Shrinkage, Flexibility, Liner Removal and Impact Resistance as specified and determined in accordance with ASTM D:4956-09. The certificate shall be submitted to the buyers on demand.</p>	CH	YES					√			

22	<p>Test certificate for aluminium sheet conforming to specification Test certificate as for each batch of the Aluminium sheet to be used for the sign board from the manufacturer of the Aluminium sheet for tests carried out in in- house test laboratory or through an independent test house. The certificate shall be submitted to the buyers on demand.</p>	CH	YES					√			
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23	<p>Results of the tests carried out by the contractor/supplier of sign board Results of the test carried out on samples of Aluminium sheet and Retro-reflective sheeting as specified by in-house testing facility available with th contractor / supplier of the sign boards or through an independent test house</p> <p>For each test specified above, one sample consisting of at least three test pieces shall be collected for every on hundred or part thereof of the sing boards Every test piece so tested should pass the tests. The certificate shall be submitted to the buyers on demand.</p>	CH	YES					√			
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