

Certified Laminate Systems for Railway Applications

The demand for base material certified according to standards set forth by the International Union of Railways and its member organizations is increasing as the transportation industry continues to define safety requirements for mass transit.

Isola's **370HR** and **IS400** are classified according to the French Standard NF F 16-101: "Rolling Stock—Fire Behaviour—Material Selection" to the European (EN 45545-2:2013), to the Italian (UNI CEI 11170-3) and to the US (NFPA 130) standards.

In 2014, our halogen-free **Green Speed®** materials were certified according to the European (EN 45545-2:2013) and to the French (NF F 16-101) standards.

DE104, **185HR** and **IS410** materials have recently been certified according to the European standard (EN 45545-2:2013). **185HR** is also certified according to the French standard (NF F 16-101).



Advantages of Isola Materials:

- Excellent dimensional stability
- Exceptional insulating characteristics
- Superior copper peel strength
- Easy wire bond processability
- Demonstrated chemical resistance
- Compatible with encapsulation material

Europe	IS400	370HR	Green Speed®	185HR	DE104	IS410
Standard EN 45545-2:2013 Test Methods EN ISO 4589-2 EN ISO 5659-2 EN 60695-2-11 NF X 70-100-1 und -2	HL1 - HL2 (R22) HL1- HL2 - HL3 (R23) HL1 - HL2 - HL3 (R24)	HL1 - HL2 (R22) HL1 - HL2 - HL3 (R23) HL1 - HL2 - HL3 (R24)	HL1 - HL2 - HL3 (R24) HL1 - HL2 - HL3 (R25)	HL1 - HL2 - HL3 (R24) HL1 - HL2 - HL3 (R25)	HL1 - HL2 - HL3 (R24) HL1 - HL2 - HL3 (R25)	HL1 - HL2 - HL3 (R24) HL1 - HL2 - HL3 (R25)
France	IS400	370HR	Green Speed®	185HR		
Standard NF F 16-101 Test Methods NF X 10-702-2 und -1 NF X 70-100-1 und -2 NF F 16-101 NF EN 60695-2-11 NF EN 60695-2-10 NF EN ISO 4589-2	F2 I2	F2 I2	F1 I2	F1 I1		
Italy	IS400	370HR				
Standard UNI CEI 11170-3 Test Methods EN ISO 11925-2 NF X 10-702 NF F 16-101	LR4	LR4				
USA	IS400	370HR				
Standard NFPA 130 Test Method BSS 7239 ASTM E 662 ASTM E 162 ASTM E 1354	Ds (1,5 min): MW (Flaming) = 23,0 Ds (4 min): MW (Flaming) = 43,3 Is = 1,0	Ds (1,5 min): MW (Flaming) = 17,7 Ds (4 min): MW (Flaming) = 102,3 Is = 3,2				

HL = Hazard Level
LR = Risk Level
F = Smoke Class

Ds = Smoke Density
Is = Flame Spread Index

ORDERING INFORMATION:

Contact your local sales representative or visit www.isola-group.com for further information.

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