

Aeroflex EPDM insulation Vs XLPE insulation	
Aeroflex EPDM insulation	XLPE insulation
Fire, Smoke and Toxicity	
The epdm insulation material is fire rated for Class V 0 as per UL 94. The flammability and smoke density is 25/50 as per ASTM E 84. It is Non flammable as per JIS K 6911. It meets the Australian fire smoke and toxicity standard 1530.	Polyethylene based foam material is not fire safe. It essentially requires an aluminium foil facing. Metallised foil facing makes it more fire sensitive. The flammability, smoke density and Oxygen depletion are major concerns with xlpe foam material.
Water vapour diffusion	
The closed cell epdm insulation material has a $\mu \geq 7000$. EPDM material does not react with water. The cell structure acts as an inbuilt water vapour barrier and effective protective barrier against water permeability.	XLPE insulation material has very low μ value. It requires external foil facing to prevent vapour diffusion and moistening at high vapour pressure. The thermal conductivity values of xlpe increases with ingress of moisture.
Temperature range	
EPDM insulation material has an upper temperature limit of 125 deg C	XLPE insulation material has an upper temperature limit of 90 deg C
EPDM insulation material has a lower temperature limit of -57 deg C	XLPE insulation material is not recommended for sub zero applications.
Heat Stability	
EPDM insulation does not shrink under extended exposure to high temperature as per ASTM C 534	XLPE insulation material shrinks when exposed to high temperature.
UV and Ozone resistance	
EPDM insulation does not develop crack when tested for ozone resistance as per ASTM 1149. No cracks develop when exposed to UV (accelerated weathering resistance test cycle UVB-313 at 60 °C/8h, CON at 50 °C/4h) as per ASTM G 154-04	XLPE insulation foam material degrades under exposure to UV (accelerated weathering) and ozone environment
Shelf life	
EPDM insulation foam material has a very long life. It is a versatile material for extreme conditions	XLPE insulation foam material has a much lower shelf life. It gets brittle and develops cracks over extended shelf life and variations in weather conditions.