

# Material Selection

Prevent galvanic corrosion

## Materials / galvanic corrosion

To avoid galvanic corrosion it is important that the potential difference between the joined materials is not too high.

The difference in voltage between any two materials is an indication of their compatibility and the following criteria are commonly used:

- Harsh environment (exposure to salt spray/weathering)

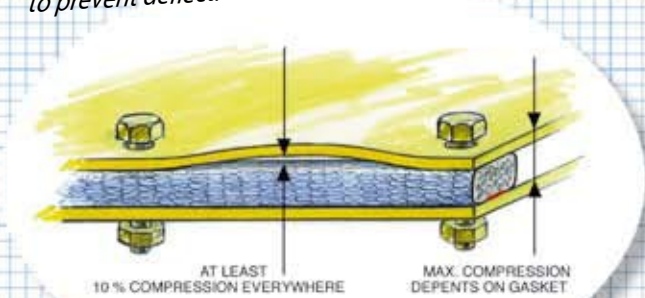
**no more than 0.3 volts**

- Benign environment (indoors, salt-free condensation only)

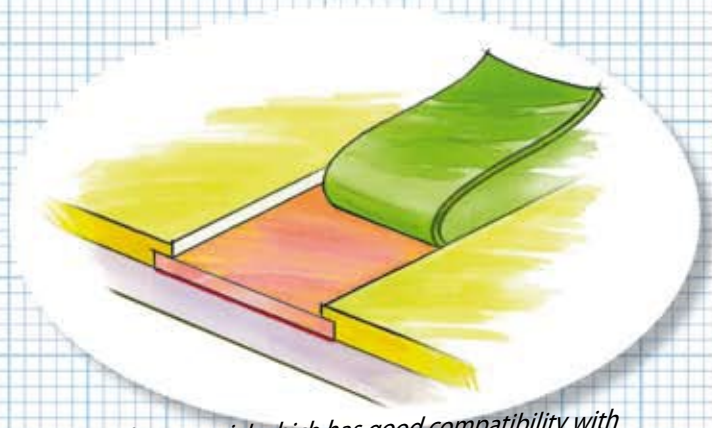
**no more than 0.5 volts**

Material enclosure	Volts	Gasket material		
		Amucor shield	Ultra Soft shield/Monel	Tinned copper
Zinc die-casting alloy	- 1.10			
Zinc plating on steel, chromate passivated	- 1.05			
Cadmium plating on steel	- 0.80			
Aluminium, wrought, cast A1	- 0.75			
Iron and steel: not corrosion resisting	- 0.70	*		
Aluminium alloy/Amucor	- 0.65			
Duralumin	- 0.60			*
Tin plate (T.C.S.)	- 0.50			
Tin plating on steel	- 0.45			
Chromium plating on nickel plated steel	- 0.45			
Iron and steel: corrosion resisting, 12% Cr	- 0.45			
Iron and steel: corrosion resisting, high Cr	- 0.35		*	
Copper and its alloys, conductive fabric	- 0.25			
Nickel-copper alloys, incl. Monel	- 0.25			
Silver	0			
Carbon (colloidal graphite in acetone)	+ 0.10			
Gold	+ 0.15			
Platinum	+ 0.15			

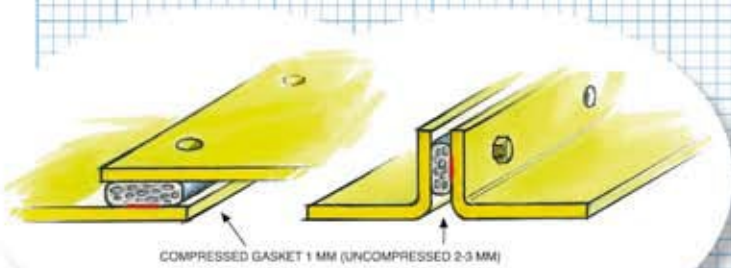
*Use a highly conductive gasket which is not too stiff to prevent deflection of the enclosure / heavy constructions.*



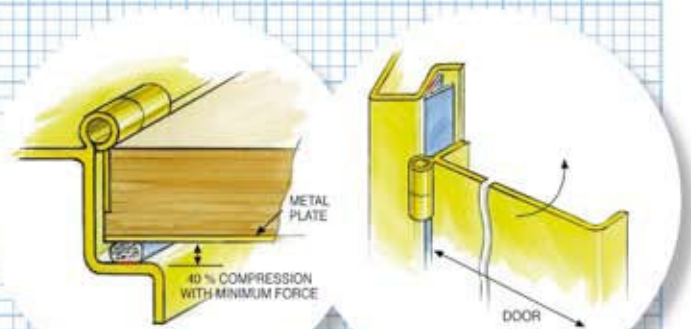
*Prevent the use of mesh and other porous gaskets to get better coupling (high frequencies).*



*Use a gasket material which has good compatibility with the metal of the enclosure to prevent galvanic corrosion.*

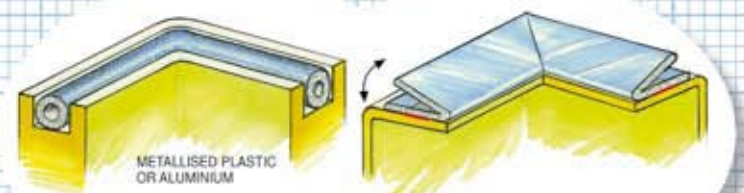
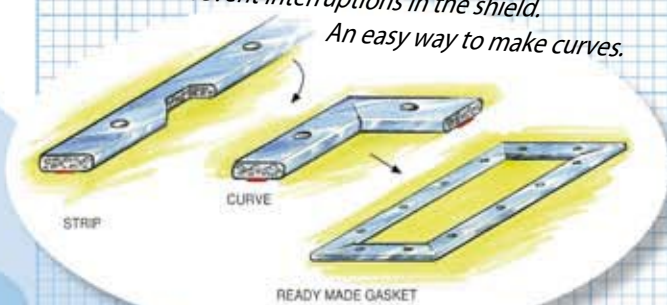


*Connect sheets with an overlap or flanges.*



*For doors, ultra soft shield or V-shape gaskets can be used to prevent a high closure force.*

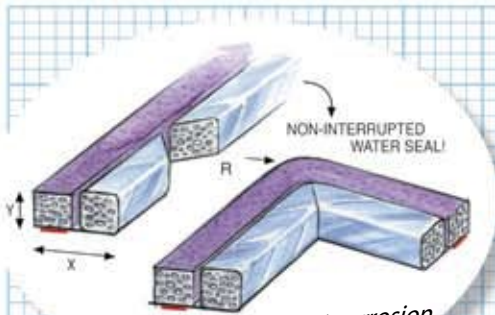
*Prevent interruptions in the shield. An easy way to make curves.*



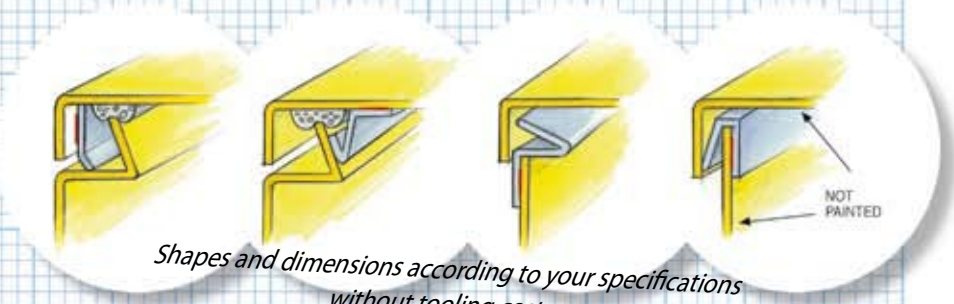
*For small dimensions, (hollow) round profiles with a highly conductive textile / foil layer or V-shapes.*

# Design Tips

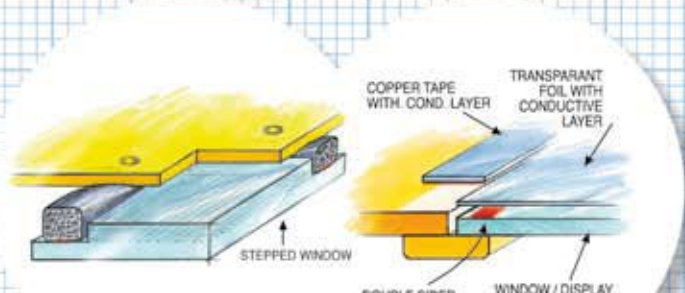
Construction details / warranty



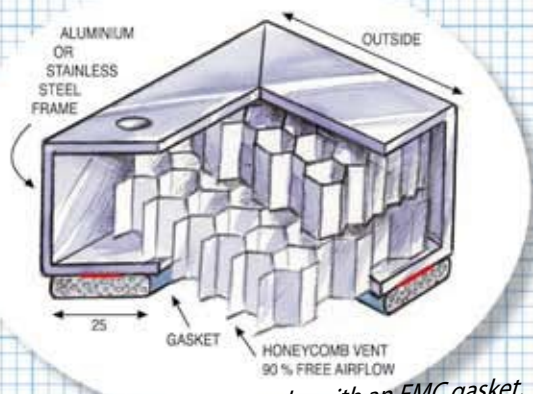
Keep water out to prevent corrosion.  
Use uninterrupted combined EMI / water seals.



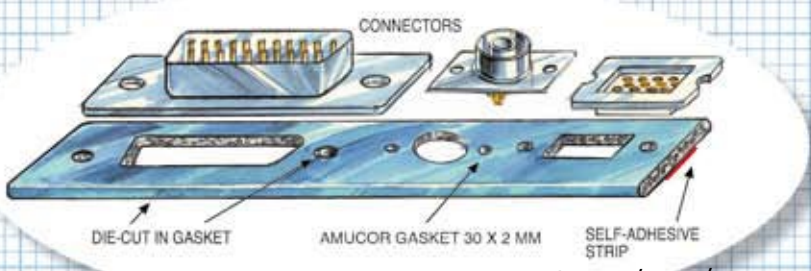
Shapes and dimensions according to your specifications  
without tooling costs.



Windows / displays with mesh or conductive transparent foil, depending on frequencies/attenuation.

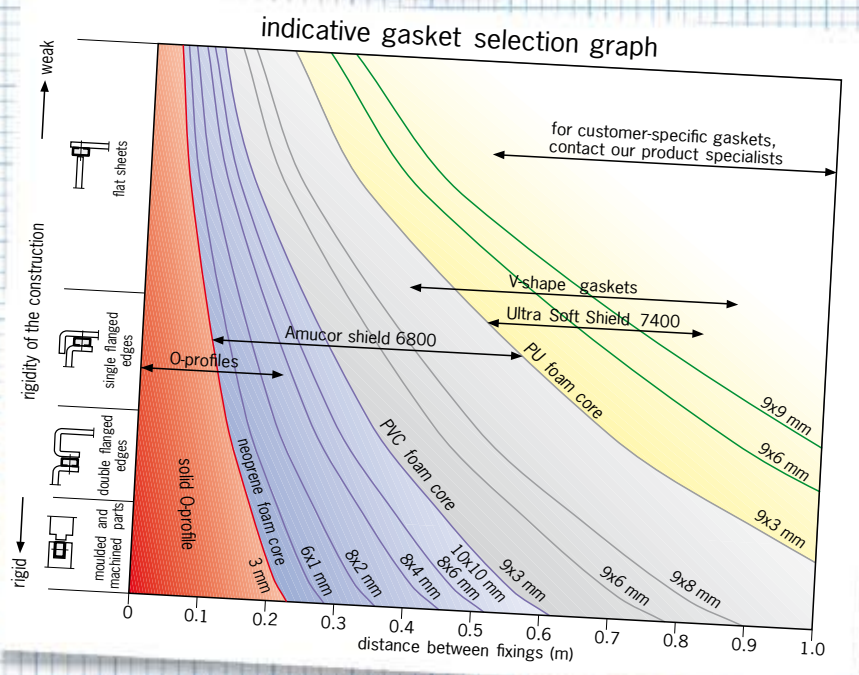
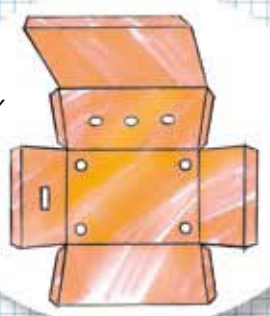


For ventilation use honeycombs with an EMC gasket.



Use connector gaskets for low-impedance coupling to the enclosure.

Sometimes only a single component needs to be shielded.



## Type of gasket /dimension

### Warranty

All Holland Shielding Systems products are continuously checked during the manufacturing process. Therefore all our products can be considered quality products, free of manufacturing errors.

The technical data of our products are based on research and should only be regarded as a guideline for the different applications. Due to the wide range of products and the large variety of applications the technical data are never to be interpreted as a guarantee. It is the buyer's responsibility to test whether the product meets the desired requirements.

In the event that, unexpectedly, defects should be found in our products, Holland Shielding Systems will investigate and replace these products as soon as possible. Holland Shielding Systems cannot be held responsible for any delays that might ensue.