

# Mitchell Plastics

## Why does PERSPEX™ warp ?

September 2003

PERSPEX™ panels can warp for a number of reasons, the most common of these are: -

**1 Lack of expansion allowance** - PERSPEX™ acrylic sheet has a higher thermal expansion allowance than aluminium and hence, in a typical sign, it is important that an expansion allowance is left to allow the material to move freely. Failure to leave such expansion will lead to warping of a sign. Mitchell Plastics recommends a thermal expansion allowance of 5mm per metre of sign length.

**2 Panels not being top hung** - for panels above 650mm height, it is recommended that PERSPEX™ acrylic sheet be top hung to avoid the potential for the panel to deflect and warp under self-loading.

**3 Inappropriate thickness of PERSPEX™ sheet used** - often with larger panels (>1000mm) there is a tendency to use only 5 mm thick sheet. In flat panel form, this thickness of sheet can be too thin and in a badly designed and constructed sign, then warpage can occur. Moulded PERSPEX™ panels offer greater strength and rigidity than flat panels.

**4 Moisture Absorption** - this is an unusual scenario and typically occurs in thin non-illuminated sign panels attached to a newly built building or newly rendered wall. In this case, the wall is still drying out. The water evaporates and is preferentially absorbed by one face of the PERSPEX™ panel. In extreme cases, this can cause warping.

**5 Poor Quality Sheet** - signs made from acrylic sheet supplied by competitor manufacturers may be of inferior quality to PERSPEX™. Excessive internal stress and lower maximum service temperatures can lead to warping in service.

In most cases, the failure of a PERSPEX™ panel in service can be traced to one of the above referred problems.

PERSPEX™ in Australia has an 8 year guarantee against retention of colour and loss of mechanical properties\*

\*Conditions apply - refer Mitchell Plastics for details.



**FREE DELIVERY WITHIN THE MELB. METRO AREA PH: (03) 9646 7877**



Mitchell  
Plastics

Mitchell Plastics  
37-53 Crockford Street  
Port Melbourne VIC 3207  
Telephone (03) 9646 7877  
Facsimile (03) 9646 7570  
sales@mitchellplastics.com.au

PERSPEX™ Authorised Distributor  
Standard Cast Acrylic Sheet  
Decorative Cast Acrylic Sheet  
Specialist Cast Acrylic Sheet  
Polycarbonate Sheet  
PVC Sheet

Core Flute Sheet  
PERSPEX™ Cut to Size  
Edge Lite signage systems  
Polystyrene textured sheet  
Acrylic Tube