

**Durability of Galvanized Cast-in Channel**

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Cast-in channel is very frequently supplied as a galvanized item since this is considerably cheaper than stainless steel (by a factor of 3 or 4).

As explained in the data sheets on Galvanizing, the life of the galvanizing protection depends on the thickness of zinc and the environmental conditions. The thickness supplied by the major European suppliers of channel is a minimum of 50 µm (microns), and may be thicker for larger profiles. However, by considering only this minimum value, it is a simple matter to arrive at the minimum life expectancy for various environments.

Figures for the rate of corrosion of galvanizing in UK are published by The Galvanizers Association in two formats.

The first of these is the Zinc Millennium Map. This is a map of the UK divided into 10 km squares and for each square, the anticipated rate of corrosion is given in µm / year. The map may be accessed via [www.hdg.org.uk](http://www.hdg.org.uk). The figures from the map are only a guide and refer to exterior/exposed conditions.

As an alternative, the Galvanizers Association also publish corrosion rates for different environments, including interior conditions. These are based on BS EN ISO 14713 and are as below.

Corrosivity category		Average corrosion rate µm / year	Expected life of 50 µm coating
C1	Interior: dry	<0.1	500 years
C2	Interior: occasional condensation Exterior: rural	0.1 to 0.7	Min 70 years
C3	Interior: high humidity, some air pollution Exterior: urban inland or mild coastal	0.7 to 2	Min 25 years
C4	Interior: swimming pools chemical plants Exterior: industrial inland or urban coastal	2 to 4	Min 12 years
C5	Exterior: industrial with humidity or high salinity coastal	4 to 8	Min 6 years

It will be seen from these figures that for normal, internal conditions (C1 & C2), standard galvanized channel will give an adequate life. For category C3, the range of corrosion varies greatly, and the degree of any other protection should be considered. If no other protection is used, then stainless steel channel should be considered. For classes C4 & C5, stainless steel is recommended.