



This directory is intended to provide a simple guide to selecting coatings in plain English but conforming to ISO 12944, the International Coatings Selection Standard.

It has been produced by the Highland Group to assist specifiers, fabricators, contractors and others in choosing a cost-effective coating system that meets the performance requirements of the task at hand.

There are three main steps to coatings selection:

- step 1: identify environment**
- step 2: determine design life**
- step 3: select appropriate coating**



Change the colour, change the world

With a heritage of technical expertise and a passion for innovation, Colourgalv offers a unique service and exceptional scope for the imagination.



Approved Applicators

Akzo Nobel and other major powder manufacturers have a system of approving applicators to ensure competence. Highland are the only Scottish company to hold approvals for galvanized steel substrate.

Highland is the only company where galvanizing and powder-coating are rolled into a single factory-controlled process under one roof.

Colourgalv is not only cost competitive, it out-performs most other coating systems available.

Highland only operates processes approved under ISO standards such as ISO 13438, ISO 1461, and all under a quality management system qualified to ISO 9001:2002.



Highland Colour Coaters Ltd
Tower Road
Blairlinn Industrial Estate
Cumbernauld
G67 2JH

T: 01236 731444
F: 01236 731555

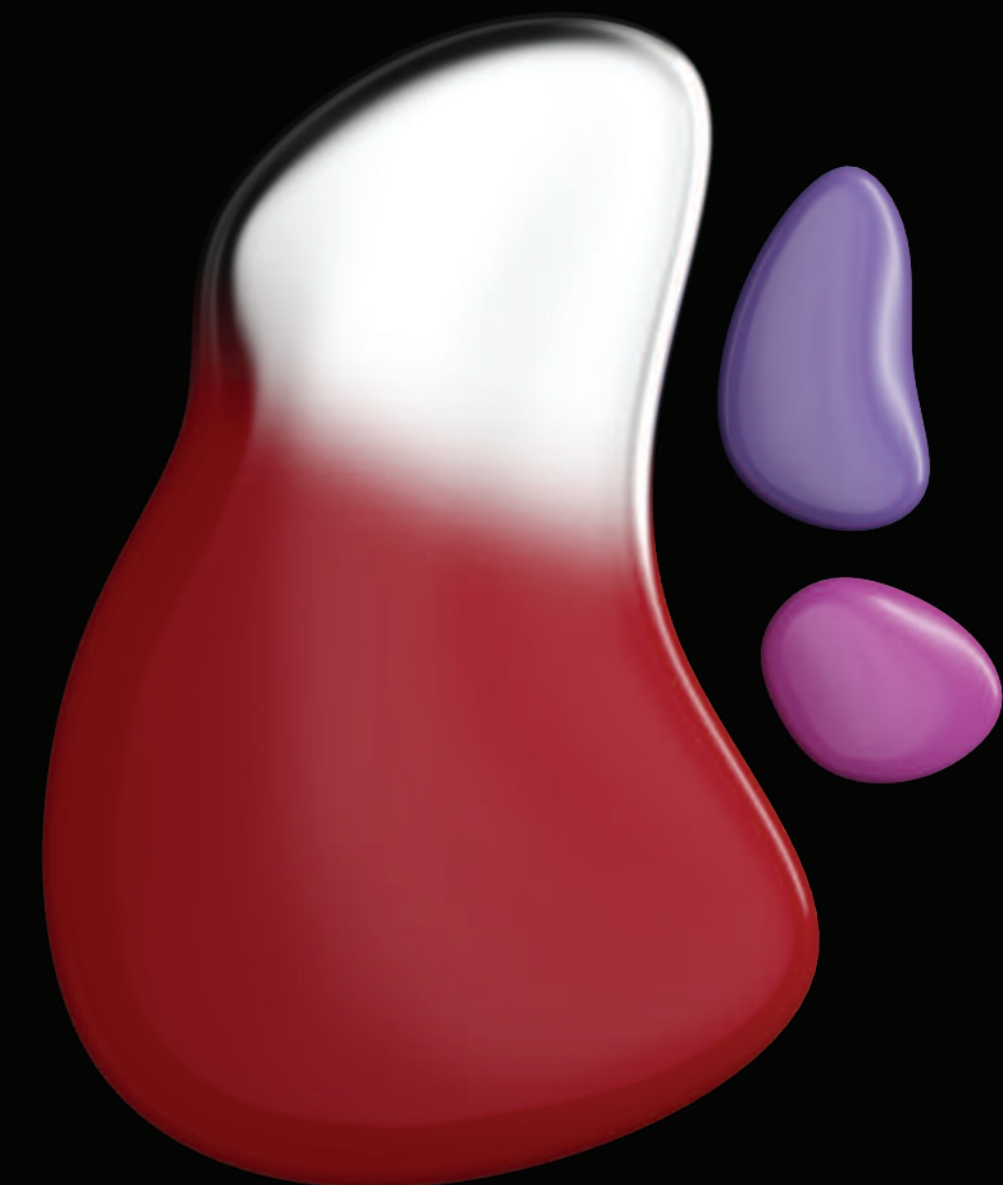


Highland Galvanizers
Pinefield Industrial Estate
Elgin
Moray
IV30 6FG

T: 01343 548855
F: 01343 545551



Visualisation by Coevolution.
Photographs for illustration purposes only.



www.higalv.co.uk
enquiries@higalv.co.uk



step 1: identify environment

category

ISO 12944 corrosion category	External use	Internal use
C5I - very high and industrial	Industrial areas with high humidity and aggressive atmosphere	Buildings or areas with almost permanent condensation and with high pollution
C5M - very high and marine	Marine coastal areas with high salinity	Buildings or areas with almost permanent condensation and with high pollution
C4 - high	Industrial areas or coastal areas with moderate salinity	Chemical plants, swimming pools, coastal ship yards
C3 - medium	Urban and industrial atmospheres with moderate sulphur dioxide pollution or coastal areas with low salinity	Production rooms with high humidity and some air pollution
C2 - low	Atmospheres with low levels of pollution and mostly rural	Unheated buildings where condensation may occur
C1 - very low	Atmospheres with virtually no pollution and rural	Heated buildings with clean atmosphere

ISO 12944 is the industry standard for selecting the correct category of exposure for any product. If there is any doubt you should always select the

more aggressive environment, contact Highland for advice or visit Galvanizers Association website www.hdg.org.uk for further information.

step 2: determine design life

design life

Choosing the correct durability is a matter of cost. If the system does not last long enough, rectification could be expensive. Equally as the effectiveness of wet coat systems increases, the cost of the material and increased application costs rise.

From experience we are able to predict the design life, in 5 year periods, of all common mild steel coatings available on the market. All you have to do is determine how long you want your product to last until first full re-coat, from 5 to 25 years plus.

step 3: select appropriate coating

coating no.

Select the appropriate combination of category (step 1) and design life (step 2) to find a coating.

Choose a suitable product that will perform as required (refer to technical information opposite).

ISO 12944 corrosion category	5 years design life	10 years design life	15 years design life	25+ years design life
C5I - very high and industrial	1*,3*,11	1*,3*,11	1*,3*,11	1*,3*
C5M - very high and marine	1*,2*,4*	1*,2*,4*	1,2,4	1,2,4
C4 - high	1*,2*,4*,8,9,10,11	1*,2*,4*,8,9,10,11	1*,2*,4*,9,10,11	1*,2*,4*,11
C3 - medium	1*,2*,4*,6,7,8,9,10,11	1*,2*,4*,6,7,8,9,10,11	1*,2*,4*,7,8,9,10,11	1*,2*,4*,11
C2 - low	1*,2*,4*,5,6,7,8,9,10,11	1*,2*,4*,6,7,8,9,10,11	1*,2*,4*,6,7,8,9,10,11	1*,2*,4*,10,11
C1 - very low	1*,2*,4*,5,6,7,8,9,10,11	1*,2*,4*,5,6,7,8,9,10,11	1*,2*,4*,5,6,7,8,9,10,11	1*,2*,4*,6,10,11

* does NOT require shotblasting prior to coating

technical information

The coatings industry is dominated by brand names rather than the factually correct chemical or process names which they evolve from. This in turn can make it almost impossible to make comparisons across the vast range of coating solutions available. In order to make this a simpler

process the various definitions of each coating solution are explained below. We have also listed a very select few of the common brand names available in the market place, and the combinations in which they should be used to achieve the performance as dictated by ISO 12944 herewith.

table a: coating definitions

Coating no.	Definition	Suggested brand combinations	Number of coats	Drying time in hours
1	Hot dip galvanizing	Galvanize	1	0
2	HDG and polyester powdercoating	Colourgalv	2	1
3	HDG and epoxy powdercoating	Colourgalv epoxy	2	1
4	HDG and polyurethane powdercoating	Colourgalv graffiti	2	1
5	Alkyd	Interlac 789 or Sigmast 40 or Leighs M155	2	5
6	Acrylic	Intergard 345 or Interthane 990 or Leighs TG162 + C137V2	2	5
7	Chlorinated rubber	Interthane 446 + Interthane 990 or Leighs TG162 + C137V2	2	14
8	Polyurethane aromatic	Interthane 438 + Interfine 878/979	2	10
9	Polyurethane aliphatic	Interzinc 109 + Intergard 475 HS + Interfine 878 or Leighs M182 + M455V2 + 1372	4	32
10	Ethyl zinc silicate	Interthane 446 + Interfine 878/979	2	10
11	Epoxy	Interzinc 52 + Interfine 878/979	3	18

table b: coating performances

✓ Good ~ Poor ✘ Unsuitable

Coating no.	Gloss retention	Colour retention	Resistance to water immersion	Resistance to rain/condensation	Resistance to solvents	Resistance to acids	Resistance to alkalis	Resistance to heat to 70°C	Resistance to heat 70-120°C	Resistance to heat 120-150°C	Resistance to heat 150-200°C	Abrasion resistance	Impact resistance	Flexibility	Hardness	UV Resistance
1	✓	✓	✓	✓	✓	✘	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	✓	✓	✓	✓	✓	~	~	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	~
4	✓	✓	✓	✓	✓	~	~	✓	✓	✓	✓	✓	✓	✓	✓	~
5	~	~	✘	~	~	~	~	✓	~	~	✘	~	~	~	✓	~
6	~	✓	~	✓	✘	~	~	~	~	~	✘	✘	~	✓	~	~
7	~	~	~	✓	✘	✓	~	✘	✘	✘	✘	~	~	✓	~	~
8	✘	✘	~	✓	✓	✓	~	✓	✓	~	✘	✓	✓	~	✓	~
9	✓	✓	✘	~	✓	~	~	✓	✓	✘	✘	~	~	✓	~	✓
10	✘	✘	~	✓	✓	✓	✓	✓	✓	✓	✓	✓	~	✘	✓	~
11	✘	✘	✓	✓	✓	✓	✓	✓	✓	~	✘	✓	✓	~	✓	✘

table c: coating attributes

✓ Good ~ Poor ✘ Unsuitable

Coating no.	Speed of coating	Internal protection	Low VOC (<300 g/l)	Medium VOC (300-500 g/l)	Reduction in scaffolding time etc	Reduction in site congestion	Stain resistance	Hardness	Overly thick coating	Low environmental impact	Factory controlled	Range of colours	Tough	Abrasion resistant	Edge protection	Self healing
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✘	✓	✓	✓	✓
2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	~	✘	✘	~	✘	✘	~	✘	✘	~	✘	✘	✘	~	✘	✘
6	✘	✘	✘	~	✘	✘	~	✘	✘	~	✘	~	✘	✘	✘	✘
7	✘	✘	✘	~	✘	✘	~	✘	✘	~	✘	✘	✘	✘	✘	✘
8	✘	✘	✘	~	✘	✘	~	✘	✘	~	✘	✘	✘	✓	✘	✘
9	✘	✘	✘	~	✘	✘	~	✘	✘	~	✘	✘	✘	~	✘	~
10	✘	✘	✘	~	✘	✘	~	~	✘	~	✘	✘	~	✓	✘	✘
11	✘	✘	✘	~	✘	✘	~	~	✘	~	✘	✘	~	✓	✘	✘

table d: common branded industrial coatings

Brand Name	Manufacturer	Description	Type	1 coat thickness	Dry time at 15°C	No of components	VOC (g/l)	Requires primer	Requires topcoat	Notes
Resistex C137V2	Leighs	Acrylic Urethane	F	60	24	2	442	y	y	Can't be used under 5°C
Resistex C237	Leighs	Acrylic Urethane	U	50	24	2	443	y	y	Can't be used under 5°C
Epigrip C400V3	Leighs	Zinc phosphate	P	75	15	2	289	-	y	Can't be used under 5°C, only in grey
Epigrip C410	Leighs	Epoxy MIO	F	100	16	2	247	y	y	Can't be used under 5°C
Leighs C750V2	Leighs	Isocyanate free	F	50	12	2	435	y	-	Protect from weather 72 hours after coating
Firetex FX2000	Leighs	Intumescent	F	1400	4	1	351	y	y	24 hours between coats, keep dry while curing, white only
Fitetex FX4000	Leighs	Intumescent	U	1400	4	1	350	y	y	24 hours between coats, keep dry while curing, white only
Firetex FX5002	Leighs	Waterbased intumescent	U	1400	6	1	63	-	y	Can't use <5°C, >80% humidity, white only
Metagard G280	Leighs	Primer	P	25	4	2	643	-	y	Can't use <5°C
Epigrip J984	Leighs	Zinc rich primer	P	50	14	2	399	-	y	Incompatible with alkyds, only in grey, blue
Epigrip J984BS	Leighs	Zinc rich primer	P	50	14	2	331	-	y	Incompatible with alkyds, only in grey, blue
Metagard L574	Leighs	Blast primer	P	25	4	2	621	-	y	"Temporary" primer
L703 Mordant wash	Leighs	Galv pretreatment	P	-	3	1	307	-	y	Prepares galv for paint, too thick is a problem
Resistex L722	Leighs	Polyurethane Zn rich Primer	P	75	4	1	349	-	y	
Leighs M155	Leighs	Alkyd quick dry ZnPhosphate	P	75	6	1	418	-	-	
Epigrip M262	Leighs	High build Epoxy	F	75	24	2	386	y	-	Designed for floors
Epigrip M455V2	Leighs	High build epoxy sheen	F	125	24	2	327	-	-	
Leighs M600	Leighs	Quickdry ZnPhosphate	P	75	4	1	511	-	y	
Firetex M69	Leighs	Blast primer for intumescent	P	25	8m	2	623	-	y	Ultra quick dry due high solvent level Note VOC
Interlac 789	Akzo Nobel	Alkyd	P/F	100	4	2	320	?	?	Requires another coat either under or over
Intergard 345	Akzo Nobel	ZnPhos Epoxy	P/F	100	5	2	335	?	?	
Intercure 200HS	Akzo Nobel	Acrylic Urethane	F	200	6	2	230	y	-	Limited colours
Interthane 990	Akzo Nobel	Acrylic Urethane	F	50	10	2	420	y	-	
Interfine 878	Akzo Nobel	Acrylic Polysiloxane	F	60	6	2	246	y	-	
Intergard 475 HS	Akzo Nobel	High build epoxy	F	100	10	2	160	y	-	
Interzinc 52	Akzo Nobel	Zn rich epoxy	P	85	6	2	156	y	-	Grey only
Interfine 979	Akzo Nobel	Acrylic Polysiloxane	F	125	5	2	231	y	-	Cosmetic rather than protective
Interpon APP120	Akzo Nobel	Powder primer	-	80	0	1	0	y	y	Powder based primer
Interpon PZ770	Akzo Nobel	Zinc rich Powder primer	-	80	0	1	0	y	y	Zinc rich powder based primer

refer to website for written specification for Colourgalv - www.higalv.co.uk