Industrial and coastal atmospheric exposure
Recoatable epoxy/polyurethane system 4147

a three page issue

September 2005
revision of 5-2000

EXPOSURE CONDITIONS:

INDUSTRIAL: Conditions of high humidity, ultraviolet radiation and chemical pollution will accelerate the corrosion process and require consideration regarding increased acidic fall out. The principal effect is corrosion due to sulphur dioxide attack and this environment is characterised by an average sulphur dioxide content of more than 10 µg per m^3 air.

COASTAL: Conditions of high humidity, ultraviolet radiation and salt spray will accelerate the corrosion process, aggravated by wind borne particles. This environment is characterised by a salt content in rain water of more than 12 mg per litre rain.

SPECIFICATION 1:	recoatable epoxy polyurethane maintenance system for intact areas and spot repair	
compatible with	alkyd, epoxy, polyurethane, chlorinated rubber and vinyl paint	
not on top of	bitumen and epoxy tar paint	
suitable for	steel, galvanised steel and aluminium	

pretreatment	– high pressure water cleaning to remove loose coating and contamination
	– intact areas; to be roughened e.g. sand papering or sweepblasting
	– damaged and corroded areas;
	  – steel; derusted to ISO-Sa2 or SPSS-Pt2 and primed
	  – galvanised steel and aluminium; to be roughened, by sand papering or sweep blasting surface shall be dry and free from any contamination and primed with e.g. Sigmacover 280 in a dft of 75 µm/3 mils	

paint system	SigmaCover 456 SigmaDur 520	75 µm/3.0 mils 50 µm/2.0 mils
note	SigmaDur 520 can be replaced by SigmaDur 550	

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SPECIFICATION 2:	recoatable epoxy/polyurethane system for total repair	
suitable for	steel, galvanised steel and aluminium	

pretreatment	– high pressure water cleaning to remove old coating system (if applicable) completely
	– corroded areas;
	  – steel; derusted to ISO-Sa2 or SPSS-Pt2 and primed
	  – galvanised steel and aluminium; to be roughened by e.g. sand papering or sweep blasting, surface shall be dry and free from any contamination and primed with e.g. Sigmacover 280 in a dft of 75 µm/3 mils	

paint system	SigmaCover 630 Alu SigmaCover 456 SigmaDur 520	75 µm/3.0 mils 75 µm/3.0 mils 50 µm/2.0 mils
notes	– a galvanised steel or aluminium substrate should be primed with SigmaCover 280 instead of SigmaCover 630 Alu – SigmaDur 520 can be replaced by SigmaDur 550	

GENERAL APPLICATION ASPECTS:

The life of any protective system is determined by the dry film thickness of the anticorrosive coating system present on weldseams, sharp edges, bolts and nuts, these being the critical 20% of the surface area where breakdown begins.

All critical areas should be given extra stripe coats with the same material as the consecutive coat of the system to achieve the specified dry film thickness.

Giving more attention to these areas will extend the life of the maintenance system.

The following parameters can be used.

For hand laid welds: Beads with a surface irregularity exceeding 3 mm or with sharp crests having a radius under 2 mm should be ground.

For sharp edges: All edges to be rounded off with a grinder to a radius of 2 mm or more.

For pitting: Pitting in excess of 2 mm in depth and under 5 mm in diameter should be filled by welding or by use of an epoxy filler.

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REFERENCES

SigmaCover 280	see product data sheet 7417
SigmaCover 630 Alu	see product data sheet 7430
SigmaCover 456	see product data sheet 7466
SigmaDur 520	see product data sheet 7524
SigmaDur 550	see product data sheet 7528
Cleaning of steel and removal of rust	see information sheet 1490
Tools for maintenance management	see information sheet 4007