# TEKNODUR 0050 / 0090 POLYURETHANE SYSTEMS

# K47

| | L | M | H |
|---|---|---|---|
| C2 | O | O | O |
| C3 | O | O | |
| C4 | | | |
| C5 | O | | |

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Coating systems for steel surfaces that will be exposed to atmospheric corrosion. The systems consist of chemically curing, solvent-borne two pack epoxy and polyurethane reactive paints. As primer on steel surfaces is used TEKNOZINC 90 SE Zinc Rich Epoxy Paint, which protects the steel surface cathodically, like zinc. Semigloss TEKNODUR 0050 or gloss TEKNODUR 0090 weather-resistant polyurethane paint can be used as top coat.

| **Teknos Coating System Symbol** | **K47a** | **K47b** | **K47c** | **K47d** | **K47e** |
|---|---|---|---|---|---|
| **EN ISO 12944-5 (2007) symbol / corrosivity category / durability range** | **A3.11/C3/H A4.13/C4/L** | **A4.14/C4/M** | **A4.15/C4/H A5I.04/C5-I/M A5M.05/C5-M/M** | **-** | **A5I.05/C5-I/H A5M.06/C5-M/H** |
| EN ISO 12944-5 (1998) symbol / corrosivity category / durability range | S3.21/C3/H S4.19/C4/L S6.05/C5-I/M | S3.22/C3/H S4.20/C4/M | S4.21/C4/H S6.06/C5-I/H S7.07/C5-M/M | S4.22/C4/H | S4.23/C4/H S7.09/C5-M/H |
| The coating system structure : | EPZn(R)EP PUR160/3-FeSa 2½ | EPZn(R)EP PUR200/4-FeSa 2½ | EPZn(R)EP PUR240/4-FeSa 2½ | EPZn(R)EP PUR280/4-FeSa 2½ | EPZn(R)EP PUR320/5-FeSa 2½ |
| TEKNOZINC 90 SE Zinc Rich Epoxy Paint | 1 x 40 µm | 1 x 40 µm | 1 x 40 µm | 1 x 40 µm | 1 x 40 µm |
| TEKNOPLAST PRIMER 5 Epoxy Primer | 1 x 80 µm | 2 x 60 µm | 2 x 80 µm | 2 x100 µm | 3 x 80 µm |
| TEKNODUR 0050 or TEKNODUR 0090 Polyurethane Paint | 1 x 40 µm | 1 x 40 µm | 1 x 40 µm | 1 x 40 µm | 1 x 40 µm |
| Total film thickness | 160 µm | 200 µm | 240 µm | 280 µm | 320 µm |
| Coating system VOC, g/m² with TEKNODUR 0050 Top Coat | 130 | 160 | 200 | 230 | 260 |

Example of the coating system's marking: K47a - EN ISO 12944-5/A3.11(EPZn(R)EPPUR160/3-FeSa 2½).

**USAGE** Structural steel exposed to atmospheric corrosion, whenever good gloss and colour retention is essential.

| **Teknos symbol** | **Typical use** |
|---|---|
| K47a | Protection of steel surfaces in corrosivity categories C3 and C4. |
| K47b | Protection for steel surfaces in corrosivity categories C3 and C4. |
| K47c | Protection for steel surfaces in corrosivity categories C4 and C5. |
| K47d | Protection for steel surfaces in corrosivity categories C4. |
| K47e | Protection of steel surfaces outside exposed to very severe atmospheric corrosion, corrosivity categories C4 and C5. |

**Surface preparation** Remove from the surfaces any contaminants that might be detrimental to surface preparation and painting. Remove also water-soluble salts by using appropriate methods. The surfaces are prepared according to the different materials as follows:

**Steel surfaces:** Remove mill scale and rust by blast cleaning to preparation grade Sa 2½ (standard ISO 8501-1).

The place and time of the preparation are to be chosen so that the prepared surface will not get dirty or damp before the subsequent treatment.

Additional instructive information for surface preparation can be found in standards EN ISO 12944-4 and ISO 8501-2.

**Prefabrication Primer** The coating systems are compatible with KORRO SE Zinc Epoxy Prefabrication Primer and KORRO SS Zinc Silicate Prefabrication Primer.

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**Application**

Stir the components thoroughly before use. Mix the base and hardener carefully with each other in the proportions given on the paint label. Mix only amount sufficient to be used within the pot life of the mixture.

Apply preferably by airless spray, since only this method provides the recommended film thickness for the primer and intermediate coat in a single operation. The temperature of the air and the surface as well as the relative air humidity during the application and drying period must conform to the figures given in the table. Higher temperatures speed up the drying process. The surface must be dry and free from dust.

The technical data of the paints are given in the table below and in the data sheets of the products.

**Maintenance**

**Touch-up:** Surfaces with rust grades Ri 1 to Ri 3 can be repaired by touching up.
Remove flaking paint and rust from damaged areas by scraping and blast-cleaning. Extend the preparation over the edges of damages into the intact coating. If required, feather the edges of prepared areas. Touch up the prepared patches with the paints of the system to the original film thickness.
**NOTE!** TEKNOZINC 90 SE is to be applied to bare steel only, not over an old paint coat.

**Complete renewal:** Surfaces with rust grade Ri 4 are to be repainted completely, as the coating has lost its protective power. Blast-clean the whole surface to grade Sa 2½ and paint from priming to top coat as for new work.

**Technical Data**

| Paint | | TEKNOZINC 90 SE | | TEKNOPLAST PRIMER 5 | | TEKNODUR 0050 or TEKNODUR 0090 | |
|---|---|---|---|---|---|---|---|
| Data Sheet | No. | 15 | | 918 | | TEKNODUR 0050: 682<br>TEKNODUR 0090: 683 | |
| Paint Type | | zinc rich epoxy paint | | epoxy primer | | polyurethane top coat | |
| Colours | | bluish grey | | red, white, grey and yellow | | Teknomix tinting | |
| Finish | | matt | | semi-matt | | TEKNODUR 0050: semigloss<br>TEKNODUR 0090: gloss | |
| Thinner | | TEKNOSOLV 9506 | | TEKNOSOLV 9506 | | TEKNOSOLV 9521 or<br>TEKNO SOLV 6220 | |
| Methods of application | | airless spray | | airless spray | | airless spray | |
| Airless spray nozzle | | 0.018 - 0.021" (turn-nozzle) | | 0.013 - 0.019" | | TEKNODUR 0050: 0.011 - 0.013"<br>TEKNODUR 0090: 0.011 - 0.013" | |
| Application conditions<br>- min. temperature<br>- max. relative humidity | <br>°C<br>% | <br>+10<br>80 | | <br>+10<br>80 | | <br>+5<br>80 | |
| Safety markings | | See Safety Data Sheet | | See Safety Data Sheet | | See Safety Data Sheet | |
| Volume solids | % | 53 ±2 (ISO 3233:1988) | | 53 ±2 | | TEKNODUR 0050: 56 ±2 (ISO 3233:1988)<br>TEKNODUR 0090: 50 ±2 (ISO 3233:1988) | |
| Total mass of solids | g/l | abt. 2100 | | abt. 900 | | TEKNODUR 0050: abt. 870<br>TEKNODUR 0090: abt. 730 | |
| Volatile organic compound (VOC) | g/l | abt. 450 | | abt. 440 | | TEKNODUR 0050: abt. 430<br>TEKNODUR 0090: abt. 460 | |
| Recommended film thickness<br>- wet<br>- dry | <br>µm<br>µm | <br>75<br>40 | | <br>113 - 188<br>60 - 100 | | TEKNODUR 0050:<br>71<br>40<br>TEKNODUR 0090:<br>80<br>40 | |
| Theoretical spreading rate | m²/l | 13.2 | | 8.8 - 5.3 | | TEKNODUR 0050: 14.0<br>TEKNODUR 0090: 12.5 | |
| Drying time at +23°C / 50% RH<br>- dust free, (ISO 9117-3:2010)<br>- touch dry, (DIN 53150:1995)<br>Overcoatable, 50% RH | | (dry film 40 µm)<br>after 5 min<br>after 30 min<br>by itself or by<br>TEKNOPLAST PRIMER 5: | | (dry film 60 µm)<br>after 1 h<br>after 4 h<br>by itself: | | (dry film 40 µm)<br>after 1 h<br>after 6 h<br><br>by itself: | |
| | | min | max.* | min. | max.* | min. | max.* |
| | **+5°C** | | | | - | after 20 h | - |
| | **+10°C** | after 6 h | after 3 months | after 6 h | after 6 months | - | - |
| | **+23°C** | after 1 h | after 3 months | after 2 h | after 6 months | after 12 h | - |
| | | - | | with TEKNODUR 0050 or 0090: | | - | |
| | | | | min. | max.* | | |
| | **+10°C** | | | after 12 h | after 7 d | | |
| | **+23°C** | | | after 4 h | after 3 d | | |

* Maximum overcoating interval without roughening.