

N.V. Nederlandse Gasunie

Coating specification for:

Fibre Glass Reinforced Plastic Coating

External

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This specification is managed by Gasunie department
"Operations & Projects; Techniek - Werktuigbouw Installaties"
(Operations & Projects; Technology - Mechanical Engineering Installations).

Technical requirements for GRP (Glass Fibre Reinforced Plastic / Glasfaserverstärkter Kunststoff) - Coating

1. For trenchless construction (e.g. HDD, direct pipe)

Factory-applied, machine-applied GRP coating of PE-coated steel pipe with mechanical protection system for trenchless installation, with the following requirements:

- A high voltage holiday test (25 kV) should be performed on the underlying PE coating prior to GRP application in accordance with DIN 30340-1:2023-12, based on ISO 21809-1.
- The factory personnel overseeing manufacturing and quality control should be qualified and certified GRP specialists.
- Minimum layer thickness GRP ≥ 5.0 mm
- Crack-free and smooth surface, free of dry spots
- The pipe must be able to be pulled into the borehole from either side
- GRP pipe ends wrapped with pull-off tape with a width of at least 125-150 mm each
- PE coating free of GRP at the pipe ends min. 70 mm (overlap area corrosion protection Weld seam coating on the construction site)
- An external testing institute must prove that all parameters required in DIN 30340-1:2023-12 for the GRP coating are fulfilled.

Suppliers must submit at least 3 reference projects with the following characteristics:

- ≥ 10 km total length of the three named projects
- Execution as GRP coatings for the closed construction method
- Diameter range $\geq$ DN800
- Execution period within the last 3 years

The following material parameters and properties of the GRP coating must be verified by system tests.

- Material hardness Shore-D ≥ 70 in accordance with DIN 30340-1:2023-12, based on ISO 868
- Full-surface shear strength between GRP and PE surface of at least 100 N/cm^2 in accordance with DIN 30340-1:2023-12
- Gouge resistance ≤ 1 mm at 50 kg load at 23°C ($\pm 2^\circ\text{C}$) in accordance with DIN 30340-1:2023-12, based on NACE TM0215-2015
- Impact resistance $\geq 15 \text{ J/mm}$ at -5°C ($\pm 2^\circ\text{C}$) and 20°C ($\pm 2^\circ\text{C}$) in accordance with DIN 30340-1:2023-12, based on ISO 21809-1

2. For open trench construction

Factory-applied, machine-applied GRP coating of PE-coated steel pipe with mechanical protection system for open laying, with the following requirements:

- A high voltage holiday test (25 kV) should be performed on the underlying PE coating prior to GRP application in accordance with DIN 30340-1:2023-12, based on ISO 21809-1.
- The factory personnel overseeing manufacturing and quality control should be qualified and certified GRP specialists.
- Minimum layer thickness GRP ≥ 2.5 mm
- GRP pipe ends wrapped with pull -off tape with a width of at least 125-150 mm each
- PE coating free of GRP at the pipe ends min. 70 mm (overlap area corrosion protection Weld seam coating on the construction site
- An external testing institute must prove that all parameters required in DIN 30340-1:2023-12 for the GRP coating are fulfilled.

Suppliers must submit at least 3 reference projects with the following characteristics:

- ≥ 3 km total length of the three named projects
- Execution as GRP coatings for open laying
- Diameter range $\geq$ DN800
- Execution period within the last 3 years

The following material parameters and properties of the GRP coating must be verified by system tests.

- Material hardness Shore-D ≥ 70 in accordance with DIN 30340-1:2023-1, based on ISO 868
- Gouge resistance ≤ 1 mm at 50 kg load at 23°C ($\pm 2^\circ\text{C}$) in accordance with DIN 30340-1:2023-1, based on NACE TM0215-2015
- Impact resistance $\geq 25\text{J/mm}$ at -5°C ($\pm 2^\circ\text{C}$) and 20°C ($\pm 2^\circ\text{C}$) in accordance with DIN 30340-1:2023-12, based on ISO 21809-1
- Confirmation of compatibility of the system for cold bending in the field

System tests, certifications and other evidence must be submitted with the offer.