

TEROSON® WT 4111 FR RAIL

August 2021

PRODUCT DESCRIPTION

TEROSON® WT 4111 FR RAIL provides the following product characteristics:

Technology	Aqueous Dispersion
Chemical Type	Synthetic Resin Dispersion
Appearance (uncured)	Black
Viscosity	Viscous liquid
Cure	Moisture Evaporation
Application	Sprayable Coating Compound
Application temperature	10 to 40°C
In service temperature	-30 to 80°C
Short exposure (up to 1h)	100°C
Specific Benefits	<ul style="list-style-type: none"> Stone chip protection Reduces NVH improve perception of quality Easy to Apply

TEROSON® WT 4111 FR RAIL is a underbody coating compound with good abrasion resistance that provide protection against road stone chips. It provides secondary noise, vibration and harshness. It is based on a aqueous synthetic resin dispersion with flame retardant additives enabling it to meet certain rail specifications.

TEROSON® WT 4111 FR RAIL demonstrates reliable adhesion to stainless steel, galvanized steel sheets, painted sheet metal, wooden underbodies and anodized aluminum. Non-galvanized steel and raw aluminum surfaces will first require application of an effective corrosion protection system (Primer coated and painted).

Typical applications are the exterior underbody surfaces of railway coaches, caravans, and mobile homes to protect the bottom surface from moisture, stone chips and dampen noise.

TEROSON® WT 4111 FR RAIL demonstrates more than 45 minutes integrity as well as 4 minutes insulation according to NFPA 130 P8.5.1.3.2 – ASTM E-119-2020 up to 2.5 mm fire film thickness (General Regulation Certificate No: AJF2103001999RS). In addition to high acoustic effectiveness the product also demonstrates thermal insulation properties after expanding.

Fire protection according to DIN EN 45545-2:

Spread of Flame:

The product has been tested to the fire protection requirements EN 45545 R7 for the Hazard Level HL3.

Test Method: ISO 5658-2

Smoke toxicity & density:

The product has been tested to the fire protection requirements EN 45545 R7 for the Hazard Level HL3.

Test Method: ISO 5659-2

Heat release rate:

The product has been tested to the fire protection requirements EN 45545 R7 for the Hazard Level HL3.

Test Method: ISO 5660-1

TYPICAL PERFORMANCE OF UNCURED MATERIAL

Density, g/cm³	1.26
Solids, %	70

TYPICAL PERFORMANCE OF CURED MATERIAL

Physical Properties :

Drying Time (2mm Wet Film)	
Density, g/cm³	1.2
Surface drying, hours	2 to 4
Application Temperature, °C	10 to 40
Completely dry, hours	20 to 48
Coating Weight per 1 mm dry film, kg/m²	1.43

Acoustic Properties :

Loss factor DIN EN ISO 6721-3	≥0.15
Temperature, °C	20
Frequency, Hz	2nd Order
Material, sheet steel, mm	1
Thickness ratio coating / steel sheet	2 : 1

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Safety Data Sheet (SDS).

Direction For Use

Surface Pretreatment

- The surfaces to be coated must be dry, free of oil, dust, grease and other components.
- An adhesion promoter is not necessary.
- Non-galvanized steel sheet and non-anodized aluminum require coating with a suitable water retardant corrosion protection.

Application:

1. If necessary, TEROSON® WT 4111 FR RAIL must be stirred before use when it has been stored between delivery and use for longer period (approx. 3 months).
2. TEROSON® WT 4111 FR RAIL is designed for airless spraying process at 5 to 8 bar.
3. All spraying equipment should be built from stainless steel, including the pump, to eliminate the possibility of the aqueous base corroding the equipment.
4. The material can be spray applied, even overhead and on vertical surfaces, up to a wet film layer thickness of 4 mm per application layer. Optimum temperature is 15 to 40°C.
5. The material can also be applied by hand with a spatula, however this application method is recommended only for smaller areas or touch up.
6. Good ventilation reduces the drying time.
7. The drying time depends on layer thickness, temperature, and the ambient air humidity.
8. If humidity is high (close to 100%), drying can be retarded severely or may cease altogether. In such cases only hot drying is possible.
9. The material can be dried at room temperature or subjected to accelerated drying at temperatures up to 70 °C.
10. During the drying process no cracks occur even on large, flat coated surfaces. If the material is allowed to pile up in grooves or at corners, and if unfavorable drying conditions ensue (eg. the absence of convection), this may give rise to occasional hairline fractures.
11. The bond should be allowed to cure (e.g. seven days), before subjecting to heavy service loads.
12. The completely dried layer can be painted. Due to the large number of paint systems on the market available, preliminary tests are recommended.

Cleaning:

1. Provided that TEROSON® WT 4111 FR RAIL is not yet dry, application equipment can be cleaned after use with water, with the addition, where necessary, of detergent.
2. Dried material can be removed mechanically.
3. If spray guns are not cleaned immediately, they should be stored under exclusion of air, e.g. directly in water.

Storage

Store product in the unopened container in a dry location. Storage information may also be indicated on the product container labelling.

Optimal Storage: 15 to 25 °C. Material is frost sensitive.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Henkel representative.

Product Specification:

The technical data contained herein are intended as reference only and are not considered specifications for the product. Product specifications are located on the Certificate of Analysis or please contact Henkel representative.

Approval and Certificate:

Please contact a Henkel representative for related approval or certificate of this product.

Data Ranges

The data contained herein may be reported as a typical value. Values are based on actual test data and are verified on a periodic basis.

Temperature/Humidity Ranges: 23 °C / 50% RH = 23±2 °C / 50±5% RH

Conversions:

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$



ADDITIONAL INFORMATION

Disclaimer

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

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