

Si-TSS 441

Spengler Industries Terne Stainless Steel Grade 411



For direct replacements of the historical Follensbee terne material, as approved by the U.S. Historical Society.

Thickness 0.5 mm (0.019 inch)
26 gauge

Material 1.4509 according to DIN 17441/EN 10 088-2
Spengler Industries USA (AISI)411

| Chemical Composition | C | Cr | Ti | Mn |
|----------------------|------|------|------|------|
| | Min. | - | 17.5 | 0.10 |
| Max. | 0.03 | 18.5 | 0.60 | |

| Mechanical Properties | Dimensional Range | RP (0.2% yeild strength) N/mm ² | RP tensile strength N/mm ² | A80 breaking strain % |
|-----------------------|-------------------------------|--|---|-----------------------------|
| | Cold-rolled strip s ≤ 6 mm | ≥ 240 | 430 - 640 | ≥ 23 |

| Minimum Values at Higher Temperatures (0.2% - yeild Strength) N/mm ² | Temperature °C | 100 | 150 | 200 | 250 | 300 | 350 |
|--|----------------|-----|-----|-----|-----|-----|-----|
| | Rp0.2 | | 195 | 190 | 185 | 175 | 165 |

| Physical Properties | Destiny kg/dm ³ | Elasticity Modulus in kN/mm ² | | | | | Thermal Expansion in 10 ⁻⁶ . K ⁻¹ between 20°C | | | | |
|---------------------|--|---|-------|-------|-------|-------|---|-------|-------|-------|-----------------|
| | | 20°C | 100°C | 200°C | 300°C | 400°C | 100°C | 200°C | 300°C | 400°C | 500°C |
| | 7.7 | 220 | 218 | 212 | 205 | 197 | 10.0 | 10.0 | 10.5 | 10.5 | 11.0 |
| | Thermal Conductivity by 20°C W/m.K | Specific Heat Capacity by 20°C J/kg.K | | | | | Electrical Resistance by 20°C Ω.mm /m | | | | Magnetizability |
| | 25 | 460 | | | | | 0.60 | | | | Extant |

| | | |
|---------------------------|--|--------------------------------|
| Product Options | Sheets | 40" x 120" |
| | | 20" coils |
| | Coils | 40" coils |
| | | <i>Custom widths available</i> |
| Fabricated Systems | All of Spengler Industries systems can be fabricated in Terne. | |

Surface Finish The terne stainless steel coil is provided with an electrolytically deposited tin layer. This metallic coating does not interfere with the longevity of the terne. Terne only comes in a mill finish.

Paint Options

Spengler Industries has developed a process to clean, prime and paint terne. Painting can be done at Spengler Industries or Spengler Industries can provide the cleaner, primer, paint and instructions to paint the terne on-site.

Off the shelf paint cannot be used with terne.

Maintenance

Si TSS 441 is a maintenance-free material. It requires no surface treatment before or after installation.

It is recommended that dirt and debris be removed promptly to avoid stains due to oxides/chemical reactions. Si TSS 441 will weather over time and soften from its shiny metallic finish to a soft earthy gray. The time it takes for the material to weather depends on a number of atmospheric and environmental factors and therefore, the material will weather relative to local conditions.

The use of oxide accelerants to speed up this natural weathering process should not be attempted.

Soldering

Use soldering irons only (3 pound maximum). Use 50/50 tin-lead solder. Do not use welding or torches.

Transport/Storage

Store material in a dry environment with stable temperatures

Use clean gloves to handle the material, the material is porous and absorbs oils

Do not allow material to get wet or collect moisture before it is installed

Store materials in a place with adequate airflow

Ensure material is stored as flat as possible if they are shingles and on its side if it is standing seam and that all weight is evenly supported

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