

GLAUNACH

THE SILENCER HANDBOOK

SURFACE TREATMENT

INTELLIGENT CORROSION PREVENTION



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CORROSION PROTECTION

GLAUNACH designs pay great attention to details. One of these is **customised corrosion protection**, which extends the service life of our silencers substantially:

- ❑ All carbon steels parts are sand-blasted and protected by a heat resistant protective coating: inner surfaces are covered with a single, exterior surfaces with a double primer layer.

NOTE: Inner surfaces of the high-pressure section, i.e. of the inlet pipe and the diffuser, are not coated, since the coating would not survive the first blow-out.

NOTE: During transport and assembling, the protective coatings might be damaged. Thus, the scope of delivery of each GLAUNACH silencer includes a coating repair kit, comprising a can of original paint and a roll-brush. The repair kit can be found at the silencer inlet.

- ❑ All parts that are particularly prone to corrosion, e.g. thin perforated plates and fine-mesh diffuser wrappings, are exclusively manufactured from stainless steel.
- ❑ For transport and storage, the silencer inlets – gas inlet(s) and dewatering pipe – are sealed with tightly fitting plastic covers.



1. STANDARD SURFACE TREATMENT FOR CARBON STEEL ELEMENTS

For different carbon steel elements, the following standard surface treatments are provided:

INLET PIPE AND DIFFUSER INNER SURFACES

- ☐ manual cleaning
- ☐ surfaces lightly oil-coated

SURFACES INSIDE THE SILENCER SHELL

- ☐ blast cleaning (compressed air / cast iron grit)
surface preparation grade SA 2½, according to ISO 12944-4 ¹⁾
- ☐ single-layer coating with zinc-rich ethyl silicate primer

SILENCER SHELL EXTERIOR FOR TEMPERATURES ≤ 400 °C / 750 °F

- ☐ blast cleaning (compressed air / cast iron grit)
surface preparation grade SA 2½, according to ISO 12944-4
- ☐ double-layer coating with zinc-rich ethyl silicate primer

NOTE: The zinc-rich primers used have a significantly superior corrosion protection in comparison to silicone aluminium paints, in particular in terms of mechanical resistance. However, as the zinc particles embedded in the primer melt at approximately 450 °C (840 °F), zinc-rich protective coatings can only be applied up to 400 °C (750 °F); at higher temperatures, these anti-corrosion coatings quickly lose their protective function.

SILENCER SHELL EXTERIOR FOR TEMPERATURES > 400 °C / 750 °F

- ☐ blast cleaning (compressed air / cast iron grit)
surface preparation grade SA 3, according to ISO 12944-4
- ☐ electric arc spray coating with aluminium
- ☐ coating with high-temperature resistant silicone aluminium paint

¹⁾ formerly DIN 55928-4

2. STANDARD SURFACE TREATMENT FOR STAINLESS STEEL ELEMENTS

DEGREASING

All stainless steel parts are carefully degreased to remove grease, oil, cutting fluids, drawing compounds and other lubricants from the surface prior to heat treatment (including welding) or passivation. Thus, carbon pick-up is effectively averted, and the full surface is homogenously passivated.

To minimise problems associated to chemical cleaning processes and responsibly protect our environment, mechanical degreasing is used wherever feasible.

WIRE BRUSHING

Heat tints, etc. are removed with stainless steel wire brushes in an environment used exclusively for brushing stainless steel parts.

NOTE: As with all mechanical cleaning processes at GLAUNACH, great care is taken to prevent contamination of the stainless steel surfaces, for instance with iron, lower-grade steel particles or iron oxides.

PICKLING AND PASSIVATION

High temperature scale produced during welding, heat treatment or hot working, and possible corrosion (by-)products are removed by acid pickling.

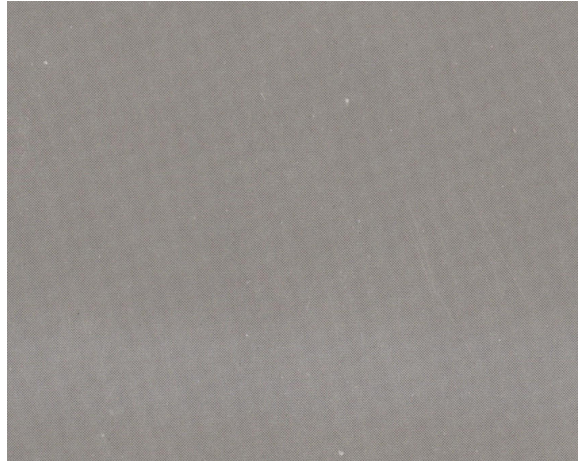
In a second step, the clean stainless steel parts may be chemically passivated, according to the intended function in the silencer.

3. SURFACE FINISHING EXAMPLES

SAND-BLASTED SURFACES



Iron Grit Blasting - SA 2 ½

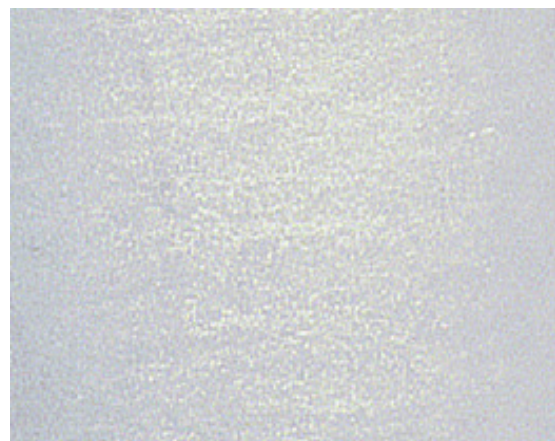


Iron Grit Blasting - SA 3

SURFACE COATINGS



*Zinc-Rich Ethyl Silicate Coating
(Carbozinc 11)*



*Silicone Aluminium Coating
(Thermaline 4700 Al)*