

STAINLESS STEEL HYGIENIC TUBE

Size range Outside Diameter: 12.7mm (1/2") to 204mm (8")

The importance of EXTERNAL Surface Finish

The UK market is well informed regarding the importance of a controlled **internal**, or “**product contact**” surface finish for hygienic tubular products.

However, when it comes to specifying a “polished” finish for the **EXTERNAL (O/D)**, the market appears to be less clear and somewhat inconsistent.

For many years, and despite the latest EN10357:2013 manufacturing specification being explicit, the following terms continue to be used as a generic term to describe an O/D polished finish i.e. “Dull Polish”, “Satin Polish”, “Dull Buff”, “Polished”, “Grained etc.

However, these terms are largely insufficient, and range widely from a rough to smooth. Furthermore, even when the more formal and well established 240grit finish is specified and used, it is likely to fall short, due to being too coarse according to the latest EU manufacturing standard EN10357 for hygienic tube: -

Stainless Steel Hygienic Tube -Surface properties and roughness according to EN10357

Version	Heat treatment condition	Surface properties and roughness			Abbreviation code for the version
		inner surface	surface seam area inner	Outer and seam area	
welded smoothed inner seam <small>from cold strip acc. to DIN EN 10088-2:2005-09, Table 6, 2B or 2R</small>	not heat-treated	$R_a < 0.80 \mu\text{m}$ pickled and passivated	$R_a < 1.60 \mu\text{m}$ pickled and passivated	pickled and passivated	CC
				ground $R_a < 1.00 \mu\text{m}$	CD
welded smoothed inner seam <small>from cold strip acc. to DIN EN 10088-2:2005-09, Table 6, 2B or 2R</small>	heat treated	$R_a < 0.80 \mu\text{m}$ pickled and passivated or bright annealed	$R_a < 1.60 \mu\text{m}$ pickled and passivated or bright annealed	pickled and passivated or bright annealed	BC
				ground $R_a < 1.00 \mu\text{m}$	BD

Roughness conversion table

Grain size abrasive belt	Roughness Ra
K80	Ra 2 – 3µm
K120	Ra 1,3-2,2µm
K180	Ra 0,9-1,4µm
K240	Ra 0,8-1,2µm
K320	Ra < 0,9µm
K400	Ra 0,4-0,5µm

Neumo Stock “meeting the standard”

WHY is a controlled polished O/D conforming to EN10357 important?

- **EN10357** explicitly states that the Outer Surface must meet a roughness measurement of **Ra <1.0 µm**. (see conversion table)
- **A smoother finish will *always* provide better corrosion resistance in any environment, increasing life cycle and is less likely to display signs discoloration.**
- Market consistency, control, transparency.
- Visual alignment with tubular fittings and uniformity throughout the tube line.
- Control samples, for clarity in the ordering process.
- Order with confidence.

Assurance

- Neumo UK Ltd will batch check our polished Hygienic tube to ensure compliance with specification Max Ra <1.0 µm.
- Surface Test Certificate - Neumo can supply a “surface measurement certificate” (** must be requested at enquiry or order stage.)
- All measurements are taken with a UKAS tested & approved **Surface measuring instrument (Surtronic S116).**

QUALITY ASSURANCE - USING OUR SURFACE MEASURING INSTRUMENT (SURTRONIC S116).

Pic.1

