

Cleaning and passivation trial report

Trial type: process proof, checked by visual inspection, ferroxyl test and tape test.

TRIAL NUMBER T-2630-C	DATE 6 June 2023	CUSTOMER Withheld	CONDUCTED BY Misonics
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1. SUMMARY

- Welded pipe samples were contaminated with weld marks and carbon deposits, plus rust on the mild steel.
- Three trials were run in a water-based multi-chamber ultrasonic cleaning system.
- 1.5 kW of ultrasonic power was used to loosen the deposits.
- After cleaning, the samples showed a good lustre.

2. PARTS

No.	Part	Material	Geometry	Contamination
1	Stainless steel pipe	Stainless steel	Smooth surface	Weld marks, carbon
2	Mild steel pipe	Mild steel	Smooth surface	Weld marks, carbon, rust
3	Cupronickel pipe	Copper-nickel	Smooth surface	Weld marks, dust

3. PROCESS

Trial 1: stainless steel pipe · total time 162 min

Parameter	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Dry
Medium	Brulin AquaVantage 815 GD	DI water	DI water	Brulin AquaVantage Passivation	DI water	DI water	Hot air
Concentration	10%	—	—	10%	—	—	—
Filter	50 µm bag	—	25 µm bag	10 µm cartridge	5 µm cartridge	5 µm cartridge	—
Temperature	60 °C	60 °C	60 °C	60 °C	60 °C	60 °C	110 °C
Time	30 min	2 min	2 min	120 min	2 min	2 min	240 s
Process	Ultrasonic	Flood wash	Flood wash	Ultrasonic	Flood wash	Flood wash	—

Result: **Ferroxyl test: OK**

Trial 2: cupronickel pipe · total time 72 min

Parameter	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Dry
Medium	Brulin AquaVantage 815 GD	DI water	DI water	Brulin AquaVantage Passivation	DI water	DI water	Hot air
Concentration	10%	—	—	10%	—	—	—
Filter	50 µm bag	—	25 µm bag	10 µm cartridge	5 µm cartridge	5 µm cartridge	—
Temperature	60 °C	60 °C	60 °C	60 °C	60 °C	60 °C	110 °C
Time	30 min	2 min	2 min	30 min	2 min	2 min	240 s
Process	Ultrasonic	Flood wash	Flood wash	Ultrasonic	Flood wash	Flood wash	—

Result: **Visually OK****Trial 3: mild steel pipe** · total time 72 min

Parameter	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Dry
Medium	Brulin AquaVantage 815 GD	DI water	DI water	Brulin AquaVantage Passivation	RP 6	RP 6	Hot air
Concentration	10%	—	—	10%	2%	2%	—
Filter	50 µm bag	—	25 µm bag	10 µm cartridge	5 µm cartridge	5 µm cartridge	—
Temperature	60 °C	60 °C	60 °C	60 °C	60 °C	60 °C	110 °C
Time	30 min	2 min	2 min	30 min	2 min	2 min	240 s
Process	Ultrasonic	Flood wash	Flood wash	Ultrasonic	Flood wash	Flood wash	—

Result: **Visually OK · tape test OK****4. REMARKS**

The results are based on trial T-2630-C run on 6 June 2023. Production parts are expected to carry soil in the same range as the trial samples.

5. BEFORE AND AFTER



Stainless steel pipe before



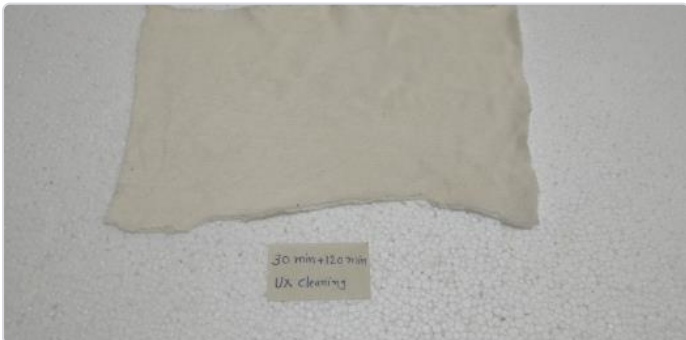
Stainless steel pipe after



Stainless steel weld before



Stainless steel weld after



Ferroxyl swab, before cleaning



Ferroxyl swab, after cleaning and passivation



Cupronickel weld before



Cupronickel weld after



Mild steel elbow before



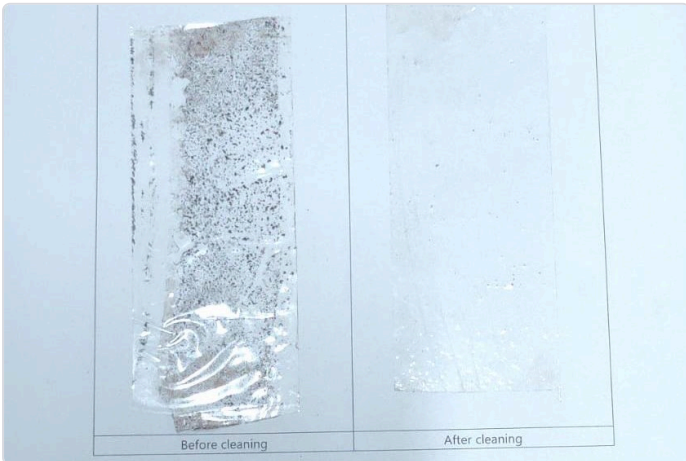
Mild steel elbow after



Mild steel weld before



Mild steel weld after



Tape test on the mild steel part: before and after cleaning

Customer name withheld.