



CRAB CAVITIES – WELDING QUALIFICATIONS

Paula Freijedo

Thierry Tardy

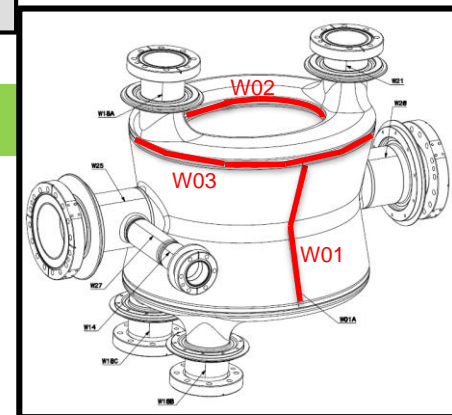
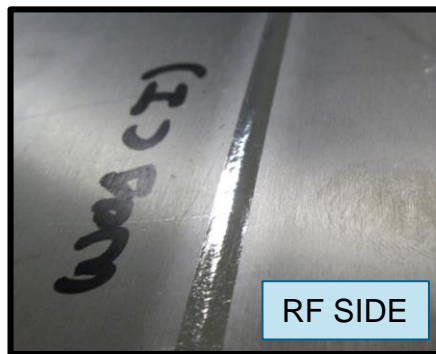
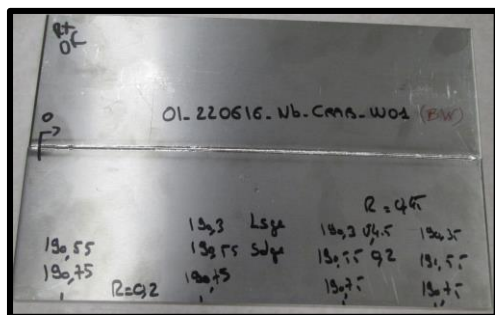
CERN – 18/07/2016

CAVITY-DQW: Samples to qualify the NIOBIUM welds

FINAL SAMPLES TO QUALIFY ACCORDING EN15614-11 WELDED

W01A/B Longitudinal “diabolo” welds :

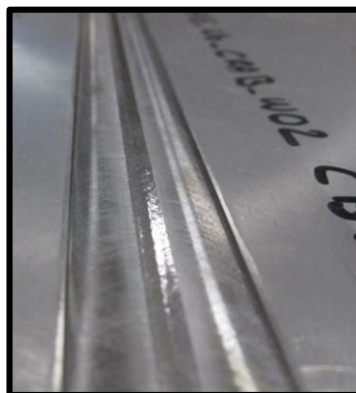
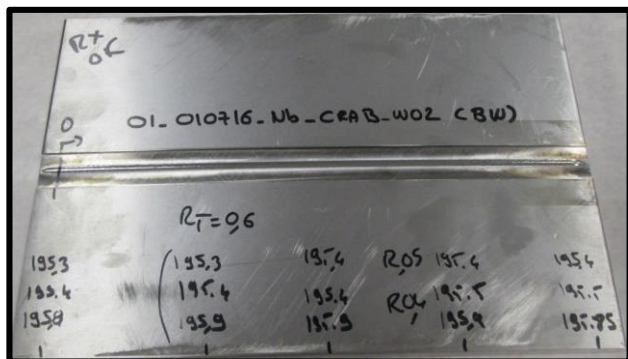
Linear welding test in 4mm of thickness performed by 2 sides with BW joint:
External welding / Internal (RF) “lisage”



Average shrinkage measured
(Retraite soudage): **0.45mm**

W02A/B Welds Bowl-Lunette”:

Linear welding test in 3mm of thickness performed by 2 sides with BW joint: External (RF) welding+lisage
Internal welding

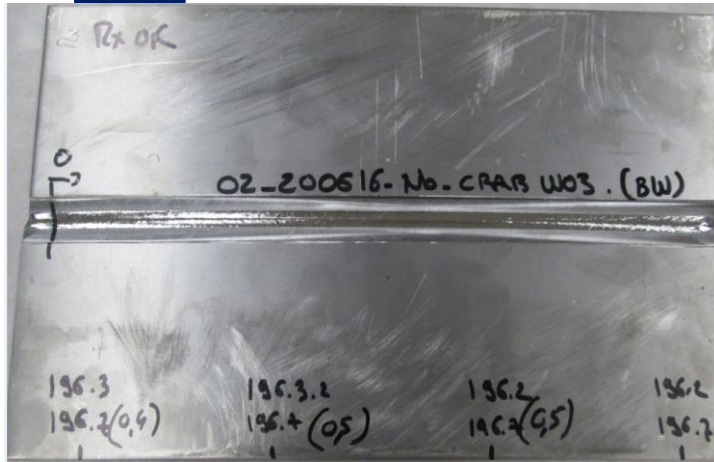


Average shrinkage measured
(Retraite soudage): **0.5mm**

W03A/B Final ellipsoidal welds :

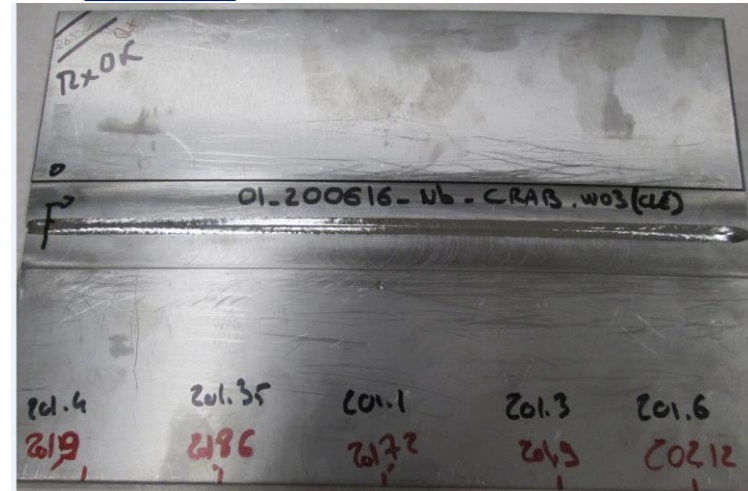
- Linear welding test in 3mm of thickness performed by 1 side.

BW



Average shrinkage measured
(Retraite soudage): **0.5mm**

KEY



Average shrinkage measured
(Retraite soudage): **0.6mm**

- Metallographic examination will be performed in these final samples to confirm the sagging

We expect the similar values measured in the previous samples around 0.3mm

Summary

- Radiographic Examination performed on all samples with SATISFACTORY results according ISO 13919-2 Level B.
- **Next test for qualification:**
 - Metallographic examination
 - Tensile Test
 - Bending Test

➤ *Please note the welding is not “exact science” may find small variations on the real Item. However these deviations should not affect the results obtained so far.*



***Thanks for your attention
Questions???***

Special Thanks to J-P. Brachet, M. Garlasche, L. Giordanino, R. Leuxe, L. Prever-Loiri, Rene Claret for their contribution