

REPORT No 11266

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ASTM A763

DETECTING SUSCEPTIBILITY TO INTERGRANULAR ATTACK IN FERRITIC STAINLESS STEELS

Program: SQ-0090.V7

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1. FOREWORD

This report summarizes the results of the **SQ-0090.V7** proficiency testing program on the determination of the susceptibility to intergranular attack of ferritic stainless steels. This program is conducted in a bilateral format, following the A.3.3 classification of the ISO 17043 standard ("Split-sample testing schemes").

South Quality conducted the testing program in June 2025 with the aim of assessing the laboratory's ability to competently perform the designated tests.

2. ORGANIZATION

Program Coordinator:	Eng. Alfredo Schmidt
Assistant Technician:	Sergio Andrada
Statistic:	Lic. Manuel Tozaki
Supervision:	Eng. Emiliano Medina

3. OBJECTIVE

The objective of this proficiency testing program is to determine of susceptibility to intergranular attack in ferritic stainless steels, using the following standard:

Standard
ASTM A763 - 15 (PRACTICES W / Z)

To verify this, samples of steel have been selected.

Participants in this program have not been previously informed about the expected classification of the samples they receive.

4. PARTICIPANT

Company:	COLUMBUS STAINLESS PTY (LTD)
Laboratory:	Columbus Laboratory
Country:	South Africa
Client ID:	F290
Contact person:	Kobie Groenewald QA Manager groenewald.kobie@columbus.co.za

5. HOMOGENEITY

Several batches were prepared identically by the staff at South Quality.

Subsequently, a homogeneity study was conducted with an ISO 17025 accredited laboratory.

The control process followed ISO Guide 35: 2017, clause 7.4.1.2. Stratified random sampling was employed, and samples were chosen using random number generation software.

The results of this test are presented below:

Size of each batch: **50 units**

Tested samples from each batch: **20 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LM2518	BATCH: LM2519	BATCH: LM2520
ETCH STRUCTURE (PRACTICE W)	YES	YES	YES

Size of each batch: **50 units**

Tested samples from each batch: **20 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LM2548	BATCH: LM2549	BATCH: LM2550
APPEREANCE OF FISURES (PRACTICE Z)	NO	YES	YES

The samples for this program are taken from the selected batches identified as LM2518 and LM2549.

For the indicated batches, the values determined in the homogeneity study are utilized as the assigned values.

The analysis of the test data indicated that the selected samples exhibited sufficient homogeneity for the program. Therefore, the results of participants identified as outliers cannot be attributed to sample variability.

6. SAMPLE INFORMATION

The following samples were sent for testing:

Batch:	LM2518
Sample ID:	02 - 31 - 48
Characteristics:	Stainless steel (AISI 430) - 16 x 3 x 100 mm

Batch:	LM2549
Sample ID:	10 - 29 - 45
Characteristics:	Stainless steel (AISI 430) - 19 x 3 x 100 mm

7. IMAGES



8. ASSIGNED VALUES

BATCH	ETCH STRUCTURE (PRACTICE W)
LM2518	STEP

BATCH	FISSURES / CRACKS (YES/NO) (PRACTICE Z)
LM2549	NO

9. PARTICIPANT RESULTS (SEE APPENDIX)

BATCH	ETCH STRUCTURE (PRACTICE W)
LM2518	STEP (*)

BATCH	FISSURES / CRACKS (YES/NO) (PRACTICE Z)
LM2549	NO

(*) The participant reported two “STEP” results and one “DUAL” result. The result with the highest prevalence (STEP) is considered the overall result.

10. STATISTICS

The results must be treated as qualitative.

For qualitative results, the comparison will be made directly against the assigned values, so any difference will be evaluated as **Unsatisfactory**.

11. EVALUATION OF PERFORMANCE

BATCH	ETCH STRUCTURE (PRACTICE W)		PERFORMANCE RESULT
	PARTICIPANT RESULT	ASSIGNED VALUE	
LM2518	STEP	STEP	SATISFACTORY

BATCH	APPAREANCE OF FISSURES (PRACTICE Z)		PERFORMANCE RESULT
	PARTICIPANT RESULT	ASSIGNED VALUE	
LM2549	NO	NO	SATISFACTORY

12. CONCLUSIONS

The overall performance on this **SQ-0090.V7** program from the participant laboratory **COLUMBUS STAINLESS PTY (LTD) - COLUMBUS LABORATORY**, is **SUFFICIENT** based on expected results.

The criteria used for the evaluation of the overall performance is the following:

- **SUFFICIENT** performance: No unsatisfactory results were obtained.
- **INSUFFICIENT** performance: An unsatisfactory result was obtained.

APPENDIX

PARTICIPANT RESULTS

(Results form)



INSTRUCTIONS & RESULTS FORM

PROGRAM:	Detecting susceptibility to intergranular attack in ferritic stainless steels
CODE:	SQ-0090
VERSION:	7
STANDARD:	ASTM A763
COORDINATOR:	Eng. Alfredo Schmidt (aschmidt@ptsouthquality.com)

1 - General

This document serves as a guide for managing the results of the **SQ-0090.V7** program.

Results must be typed, not handwritten.

2 - Standard

ASTM A763 - 15

3 - Tests involved

TEST
Determination of the susceptibility to intergranular attack of ferritic stainless steels (Practices: W / Z)

4 - Samples

CODE	SAMPLE	QUANTITY
LM2518-XX	Stainless steel - 16 x 3 x 100 mm	3
LM2549-XX	Stainless steel - 19 x 3 x 100 mm	3

5 - Notes

- a) Being a bilateral program, there is no deadline for submitting results.
- b) The tables in this document may be modified by the participant, if desired, to include data or observations.
- c) The samples are marked with their code on one of their faces. The side bearing the code must be considered the front side (F), and the opposite side, the rear side (R).
- d) Samples must be retained until the end of the program, which concludes with the submission of the final report.
- e) To review the results, test images would be appreciated. Images can be attached at the end of this document or sent by email.
- f) Once this document is completed, it must be converted into a PDF file and sent to the program coordinator.

6 - Test results

Procedure:	According to standard
Test dates:	11/06/2025

Practice:	W
Sensitization treatment:	Do not perform
Polished finish:	3 micron
CODE	ETCH STRUCTURE
LM2518-02	Dual
LM2518-31	Step
LM2518-48	Step
Magnification:	200x

Practice:	Z
Sensitization treatment:	Do not perform
Polished finish:	As received

CODE	Surface outside the curve	Dimensions (l, w, t) (mm)	Mandrel radius (mm)	Fissures (YES/NO)
LM2549-10	F	100 x 16 x 3	3	No
LM2549-29	R	100 x 16 x 3	3	No
LM2549-45 (*)	F / R			

Solution boiling - duration (h):	24
Magnification:	10x

(*) Samples should not be analyzed. They are reserved for the eventual need to repeat tests due to doubtful results, either at the initiative of the participant or at the request of South Quality.

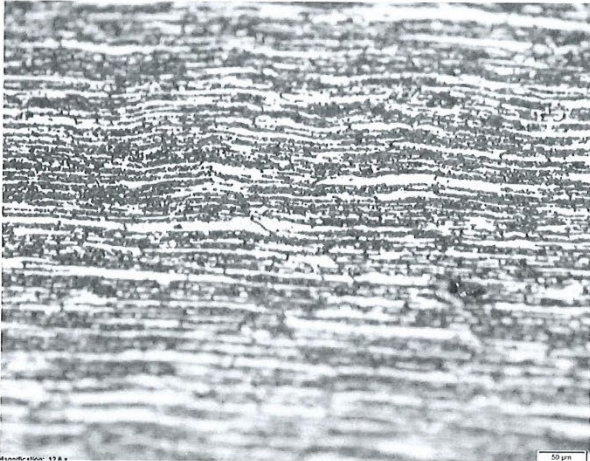
OBSERVATIONS

PHOTOGRAPHS

LM2518-02



LM2518-31



LM2518-48



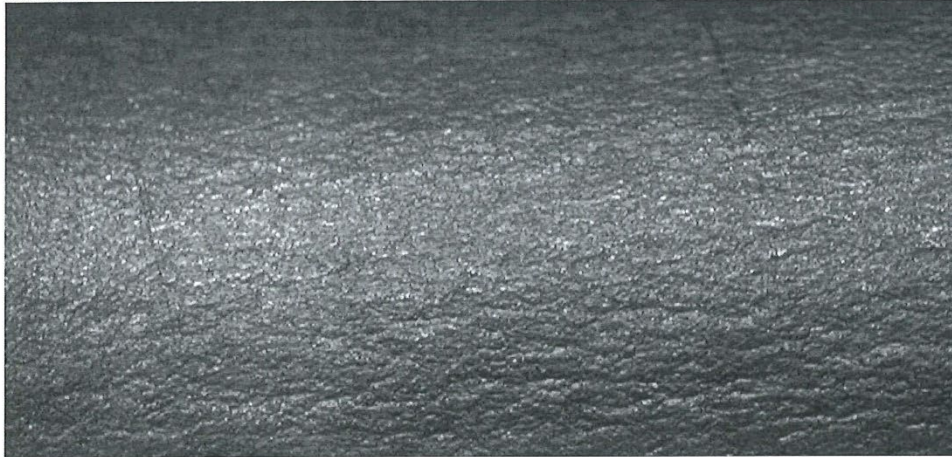
DSQ-012

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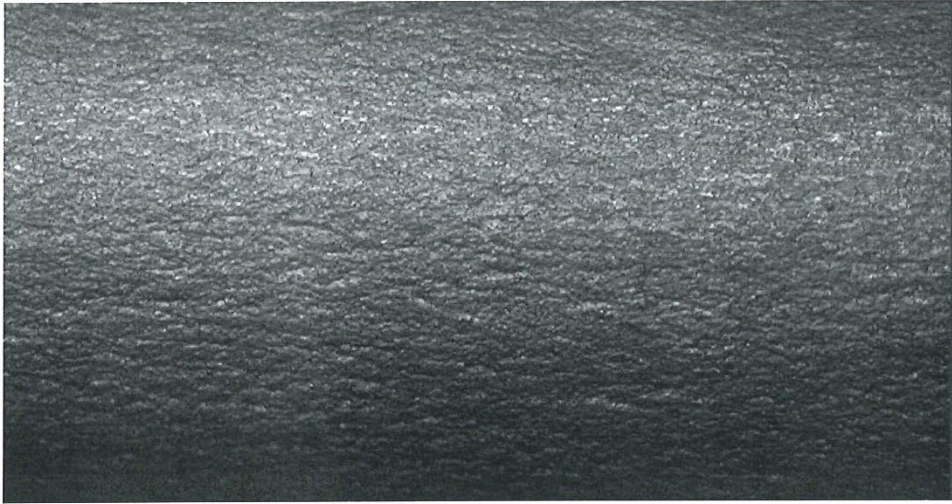
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LM2549-10



LM2549-29



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