

Certificate No: MD00/2768/0007/6b

SHOCKWAVE METALWORKING TECHNOLOGIES BV (SMT) P.O. Box 50 NL 4715 ZH Rucphen The Netherlands

has been approved as a manufacturer in accordance with the requirements of Lloyd's Register for :-

Aluminium / Steel Transition Joints

This approval is subject to compliance with the Rules for the Manufacture, Testing and Certification of Materials. The full details of the processes, products and grades to which this approval applies are given in the Appendix of this certificate.

Lloyd's Register is to be notified of any change that may affect the validity of this Certificate.

This Certificate is issued to the above manufacturer and is valid until the date given below.

Valid Until: 03 November 2021 Date of Issue: 11 January 2019

Clive Arnold
Senior Metallurgical Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register group

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Appendix 1

SHOCKWAVE METALWORKING TECHNOLOGIES BV (SMT)

P.O. Box 50 NL 4715 ZH Rucphen The Netherlands

 Product
 Grade
 mm thickness Maximum

 Transition Joint
 TRIPLATE "S355"
 34.00

1st. Layer Steel S355J2G3 up to 20 mm thickness 2nd. Layer Aluminium alloy 1050A up to 8 mm thickness 3rd. Layer Aluminium Alloy 5083 up to 6 mm thickness

Maximum bond temperature 300 Degrees Celcius

Minimum shear strength 55 N/nn2

Minimum tensile strength 75 N/mm2

Minimum bend radius 10 times thickness

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Clive Arnold

Senior Metallurgical Specialist to Lloyd's Register EMEA A member of the Lloyd's Register group

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Appendix 2

SHOCKWAVE METALWORKING TECHNOLOGIES BV (SMT)

P.O. Box 50 NL 4715 ZH Rucphen The Netherlands

Product mm thickness Maximum Grade Transition Joint TRIPLATE "GRADE A" 34.00

1st. Layer Steel Grade A 20 mm thickness up to 2nd. Layer Aluminium alloy 1050A up to 8 mm thickness Aluminium Alloy 5083 6 mm thickness 3rd. Layer up to

300 Degrees Celcius Maximum bond temperature

Minimum shear strength 55 N/nn2

75 N/mm2 Minimum tensile strength

Minimum bend radius 10 times thickness

Valid Until: 03 November 2021 Date of Issue: 11 January 2019

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