



APPROVAL

It is hereby certified that the company

**Test laboratory RESCOLL
Site Pessac**

is qualified for following
SPECIAL PROCESSES

- TEST LABORATORY

- DSC test (Differential Scanning Calorimeter test)
- ILSS test (Interlaminar Shear Strength test)
- Flexural test
- Compressive test (Sandwich constructions)
- CDP test (Climbing Drum Peel test)
- Floating peel test
- Wet ageing
- Fire test

This qualification is granted under
the conditions defined in appendix1

Marignane, 2019 March 01th

M. BLACAS

**HO Special Processes Quality
Management**

Signed

ETLL

O. GOUPILLON

**Materials & Processes
Quality laboratory**

Signed

ETLL

APPENDIX 1

SPECIAL PROCESS: TEST LABORATORY (Independent)

- **Differential Scanning Calorimeter test (DSC)**

Performed in accordance with the following documents:

- EN6041 & ISO11357-1 & ISO11357-2 & ISO11357-3 & ISO11357-5:
Analysis of non-metallic materials (uncured) by DSC (Differential scanning calorimeter)
- MO 616A: Prepregs: Incoming and storage
- MO 0740 : Calibration of modulated DSC
- MO 081K : Operating procedure: measurement in DSC

With the following resources:

Cold chamber referenced CONG 1007
DSC Q2000 TA Instruments referenced DSC 1001

This Qualification is based on the following results:

- AH qualification program ETLN n°2017-2192
- Test results PTP COMPOSITE DSC 2013
- COFRAC Accreditation certificate n°1-1995 rev. 4 (validity : 01/2018)
- NADCAP Accreditation NMMT n°91544165819 (validity: 01/2019)
- AIRBUS Qualification certificate n°SUR2016.0390 ind E
- Safran Qualification certificate n° AQPS 518
- Supplier Testing Report : Example of BA (uncured prepreg)
- Analysis of different RESCOLL procedures (MO) see Note ETLN N°2017-2193

The Qualification is subject to the following specific conditions:

All Safety class according to EP04-06

Participating to the PTP Composite Scheme (www.centech-sa.fr/ptpcomposite) during the year of qualification and every two years for:

- DSC test in accordance to ISO 11357

Restrictions:

None

This qualification could be suspended or cancelled at any time in case of decrease in quality. All modifications initiated by supplier must be submitted to AIRBUS Helicopters for approval. In case of AIRBUS Helicopters documentation revision, modifications have to be implemented or request for deviation have to be submitted to AIRBUS Helicopters for approval.



APPENDIX 1

SPECIAL PROCESS: TEST LABORATORY (Independent)

- Interlaminar Shear Strength test (ILSS)
- Flexural test

Performed in accordance with the following documents:

- EN2563 July 97 Carbon Fibre Reinforced plastics unidirectional laminates - Determination of apparent interlaminar shear strength
- EN 2377 June 89 Glass Fibre Reinforced plastics - Determination of apparent interlaminar shear strength
- ISO14130 April 98 Composite plastics reinforced of fibres. Determination of apparent interlaminar shear strength by flexural test
- EN2562 July 97 Carbon fibre reinforced plastics unidirectional laminates – Flexural test parallel to the fibre direction
- MO334I : Operating procedure: Composites CIL NF EN 2563
- MO206G: Operating procedure: Composites CIL NF EN 2563, NF EN ISO 14130, NF EN2377 et ASTM D2344
- MO 199 G: Operating procedure : Composites and plastics – Characterization flexure 3 points according to NF EN ISO 178, NF EN ISO 14125, NF EN 2746, NF EN 2562 et ASTM D790

With the following resources:

Test machine: CR01 or similar
Load cell: CAFO01 10 CR01 or similar
Devices: EM 137 + EM 020 or similar

This Qualification is based on the following results:

- Audit report ETLN n°2018-1017
- Follow-up of corrective actions ETLN n°2018-2351 issue A
- AH qualification program ETLN n°2017-2192 Issue A
- AIRBUS Qualification certificate n°SUR2016.0390 ind E
- Cross checks : test report ETLN n°2018-3344
- Analysis of different RESCOLL procedures (MO) see Note ETLN N°2017-2193 Issue D

The Qualification is subject to the following specific conditions:

All Safety class according to EP04-06

Participating to the PTP Composite Scheme (www.ptpscheme.com) during the year of qualification and every two years for:

- ILSS test in accordance to EN 2563

Restrictions:

/

This qualification could be suspended or cancelled at any time in case of decrease in quality. All modifications initiated by supplier must be submitted to AIRBUS Helicopters for approval. In case of AIRBUS Helicopters documentation revision, modifications have to be implemented or request for deviation have to be submitted to AIRBUS Helicopters for approval.



APPENDIX 1

SPECIAL PROCESS: TEST LABORATORY (Independent)

- Climbing drum peel test (CDP)

Performed in accordance with the following documents:

- EI 071 IGC 04 26 270 issue G Determination of peeling strength climbing drum test
- EN2243-3 March 2006 Non- metallic materials – Structural adhesives test method – Part 3: Peeling test metal-honeycomb core
- MO320G : Operating procedure: Climbing drum peel NF EN 2243-3, ASTM D1781 et IGC-04-26-270

With the following resources:

Test machine: ZWICK model BT1-FB100TN S/N 176694 n° A0292 or similar
Load cell: ZWICK type XforceHP – S/N 755289 – 10 kN – class 0,5 from 30N to 10 000N or similar
Device n°: EM 010 or similar

This Qualification is based on the following results:

- Audit report ETLN n°2018-1017
- Follow-up of corrective actions ETLN n°2018-2351 issue A
- AH qualification program ETLN n°2017-2192 Issue A
- AIRBUS Qualification certificate n°SUR2016.0390 ind E
- Cross checks : test report ETLN n°2018-3344
- Analysis of different RESCOLL procedures (MO) see Note ETLN N°2017-2193 Issue D

The Qualification is subject to the following specific conditions:

All Safety class according to EP04-06

Participating to the PTP Composite Scheme (www.ptpscheme.com) during the year of qualification and every two years for:

- Climbing drum peel test in accordance to EN 2243-3

Restrictions:

/

This qualification could be suspended or cancelled at any time in case of decrease in quality. All modifications initiated by supplier must be submitted to AIRBUS Helicopters for approval. In case of AIRBUS Helicopters documentation revision, modifications have to be implemented or request for deviation have to be submitted to AIRBUS Helicopters for approval.



APPENDIX 1

SPECIAL PROCESS: TEST LABORATORY (Independent)

- Compressive test (Sandwich constructions)

Performed in accordance with the following documents:

- ASTM C364 April 2016 Standard test method for Edgewise Compressive Strength of Sandwich Constructions
- MO656A : Operating procedure: Compressive test according to ASTM C364

With the following resources:

Test machine: ZWICK ZW02 or similar
Load cell: CAFO30-250-ZW02 or similar
Device n°: EM C364

This Qualification is based on the following results:

- Audit report ETLN n°2018-1017
- Follow-up of corrective actions ETLN n°2018-2351 issue A
- AH qualification program ETLN n°2017-2192 Issue A
- Cross checks : test report ETLN n°2018-3344
- Analysis of different RESCOLL procedures (MO) see Note ETLN N°2017-2193 Issue D

The Qualification is subject to the following specific conditions:

All Safety class according to EP04-06

Participating to the inter-laboratories tests during the year of qualification and every two years for:

- Compressive test in accordance to ASTM C364

Restrictions:

/

This qualification could be suspended or cancelled at any time in case of decrease in quality. All modifications initiated by supplier must be submitted to AIRBUS Helicopters for approval. In case of AIRBUS Helicopters documentation revision, modifications have to be implemented or request for deviation have to be submitted to AIRBUS Helicopters for approval



APPENDIX 1

SPECIAL PROCESS: TEST LABORATORY (Independent)

- Single lap shear test (at ambient temperature and elevated temperature)

Performed in accordance with the following documents:

- EI 071 IGC 04-26-345 issue 1 Adhesives Metal/metal Shear test
- EI 071 IGC 04-26-346 issue A2 Adhesives Composite/composite Shear test
- EN 2243-1 March 2006 Non-metallic materials – Structural adhesives – Test method – Part 1 : Single lap shear
- MO 031 M : Operating procedure: Single lap shear according to NF EN 1465, NF EN 2243-1, ISO 4587, IGC 04 26 345 and IGC 04 26 346

With the following resources:

Test machine: Criterion 43 or similar
Load cell: according to instructions I012
Device n°: /

This Qualification is based on the following results:

- Audit report ETLN n°2018-1017
- Follow-up of corrective actions ETLN n°2018-2351 issue A
- Analysis of different RESCOLL procedures (MO) see Note ETLN N°2017-2193 Issue D

The Qualification is subject to the following specific conditions:

All Safety class according to EP04-06

Participating to the PTP Composite Scheme (www.ptpscheme.com) during the year of qualification and every two years for:

- Lap Joint Shear according to EN 2243-1

Restrictions:

/

This qualification could be suspended or cancelled at any time in case of decrease in quality. All modifications initiated by supplier must be submitted to AIRBUS Helicopters for approval. In case of AIRBUS Helicopters documentation revision, modifications have to be implemented or request for deviation have to be submitted to AIRBUS Helicopters for approval



APPENDIX 1

SPECIAL PROCESS: TEST LABORATORY (Independent)

- Floating peel test (at ambient temperature and elevated temperature)

Performed in accordance with the following documents:

- EI 071 IGC 04-26-360 issue B1 Adhesives Metal/metal Peel Tests (Floating peel)
- EN 2243-2 March 2006 Non-metallic materials – Structural adhesives – Test method – Part 2 :
Peel metal-metal
- MO 402 E: Operating procedure: Peel test according to EN1464, EN 2243-2, ISO 4578 and IGC 04 26 360

With the following resources:

Test machine: all test machines from RESCOLL

Load cell: according to instructions I012

Device n°: EM 005-2 and EM005-3

This Qualification is based on the following results:

- Audit report ETLL n°2018-1017
- Follow-up of corrective actions ETLL n°2018-2351 issue A
- Analysis of different RESCOLL procedures (MO xxx) see Note ETLL N°2017-2193 Issue D

The Qualification is subject to the following specific conditions:

All Safety class according to EP04-06

Participating to the PTP Composite Scheme (www.ptpscheme.com) during the year of qualification and every two years for:

- Floating roller peel according to EN 2243-2

Restrictions:

/

This qualification could be suspended or cancelled at any time in case of decrease in quality. All modifications initiated by supplier must be submitted to AIRBUS Helicopters for approval. In case of AIRBUS Helicopters documentation revision, modifications have to be implemented or request for deviation have to be submitted to AIRBUS Helicopters for approval



APPENDIX 1

SPECIAL PROCESS: TEST LABORATORY (Independent)

- Wet ageing

Performed in accordance with the following documents:

- EN 2823 August 2017 Non-metallic materials – Structural adhesives – Test method – Part 2 : Peel metal-metal
- prEN 3615 April 1992 Determination of the conditions of exposure to humid atmosphere and moisture absorption
- MO 291 E : Operating procedure: Wet ageing according to EN2823 and prEN3615

With the following resources:

Climatic chamber

This Qualification is based on the following results:

- Audit report ETLN n°2018-1017
- Follow-up of corrective actions ETLN n°2018-2351 issue A
- Analysis of different RESCOLL procedures (MO) see Note ETLN N°2017-2193 Issue D

The Qualification is subject to the following specific conditions:

All Safety class according to EP04-06

Restrictions:

/

This qualification could be suspended or cancelled at any time in case of decrease in quality. All modifications initiated by supplier must be submitted to AIRBUS Helicopters for approval. In case of AIRBUS Helicopters documentation revision, modifications have to be implemented or request for deviation have to be submitted to AIRBUS Helicopters for approval



APPENDIX 1

SPECIAL PROCESS: TEST LABORATORY (Independent)

- Flammability & Flame Propagation

Performed in accordance with the following documents:

CS/FAR 25, Appendix F

- Part. I, §(a)(1)(i) - Vertical Bunsen burner, 60s – AITM 2.0002 A
- Part. I, §(a)(1)(ii) & (iii) - Vertical Bunsen burner, 12s – AITM 2.0002 B
- Part. I, §(a)(1)(iv) - Horizontal Bunsen burner, 15s – AITM 2.0003 A

With the following resources:

3 Flammability chambers

This Qualification is based on the following results:

- Evaluation report ETLN n° 2017-1027

The Qualification is subject to the following specific conditions:

All Safety class according to EP04-06

Restrictions:

/

This qualification could be suspended or cancelled at any time in case of decrease in quality. All modifications initiated by supplier must be submitted to AIRBUS Helicopters for approval. In case of AIRBUS Helicopters documentation revision, modifications have to be implemented or request for deviation have to be submitted to AIRBUS Helicopters for approval

