

Fiberglas-Technik Rudolf Lindner EASA AP.161	Repair Instructions (RI-G01) „Standard Repairs“	Grob Sailplanes EASA.A.250	Page 5 of 8 Edition 22.07.2014
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REPAIR INSTRUCTIONS No. RI-G01

I. TECHNICAL DETAILS

1. Aircraft affected:

Grob Sailplanes (TCDS EASA.A.250),
all models, all serial numbers

i.e. the following models:

ASTIR CS / ASTIR CS 77 / ASTIR CS JEANS / STANDARD ASTIR II / CLUB ASTIR II /
G 102 STANDARD ASTIR III / G 102 CLUB ASTIR III / G 102 CLUB ASTIR IIIb

SPEED ASTIR II / SPEED ASTIR IIb

TWIN ASTIR / TWIN ASTIR TRAINER / G 103 TWIN II / G 103A TWIN II ACRO /
G 103C TWIN III ACRO / G 103C TWIN III

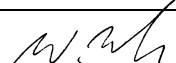
G 103C TWIN III SL

2. Subject

ATA-Code: 51
Standard Practices and Structures – General
Approved Repair Instructions according to Part-21 and Part-M

3. Introduction

This Repair Instruction is issued for the purpose to prevent single approvals for commonly used standard repairs, which are not covered in the corresponding Maintenance Manuals. Standard Repairs are repairs, that restore the original design without change by application of approved slice ratios, materials und curing procedures. Following the information listed in para. 4 „Accomplishment/ Instructions“ repairs may be regarded as approved by the manufacturer in the sense of the EASA regulation Part-21 para. 21.A.433.

Prepared: 	Verified:	Complies:
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4. Accomplishment / Instructions

4.1 Concurrent Documents

For sailplanes and powered sailplanes the following documents in the regarding actual edition shall be accepted as approved maintenance and repair instructions according to national regulations and Part-21 and Part-M:

- Drawings and/ or instructions of the manufacturer
- "Grundlagen der Luftfahrzeugtechnik in Theorie und Praxis", Band II published by TÜV Rheinland GmbH, ISBN Nr.: 3-88585-001-X
- "Grundlagen der Luftfahrzeugtechnik in Theorie und Praxis", Band V: Segelflugzeuge und Motorsegler, Verlag TÜV Rheinland GmbH, ISBN Nr.:3-8249-0351-2
- R.C. Stafford-Allen „Standard Repair to Gliders“, published by British Gliding Association
- "Kleine Fiberglas-Flugzeug-Flickfibel", published by Ursula Hänle
- Seminardruck "Faserverbundwerkstoffe im Segelflugzeugbau", Fortbildungsseminar des DAeC an der Fachhochschule Rosenheim
- "Aircraft Inspection and Repair" FAA AC 43.13-1A or new FAA issue FAA AC 43.13-1B
- AP 101A-0601-1 "Employment and Repair of Aircraft Composite Materials", published by the UK Military Aviation Authority

REMARK: It has to be pointed out, that additionally these documents, national rules regarding maintenance and inspectoins do apply.

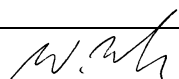
4.2 Applicable splice ratios

In addition to the information given in the Repair Instructions of the Maintenance Manuals this Repair Instruction gives additional information about applicable splice ratios to guarantee that the correct ratios are used during repairs.

The splice ratios are as follows:

- | | | |
|--------------------------|-------|-----------------------|
| - glass cloth | 50:1 | (92110, 92125, 92140) |
| - UD glass cloth | 60:1 | (92145, 92146) |
| - glass roving | 80:1 | |
| - carbon cloth | 100:1 | (98141) |
| - carbon roving | 120:1 | |
| - UD carbon cloth | 120:1 | (CC756) |
| - aramide cloth (Kevlar) | 60:1 | |

Prepared:



Verified:

Complies:

4.3 Applicable resin/ hardener – systems

Hinweis: The originally approved resin/ hardener systems are listed in the corresponding Repair Instructions of the Maintenance Manual. If these are no longer available the following resin/ hardener systems are approved as alternatives:

A. Resin L 285 / hardener H 285/ 286/ 287 (former Scheufler company, today Momentive)

Resin	Hardener		Mixing Ratio (Weight-%)
L 285	H 285		100 : 38
	H 286		100 : 38
	H 287		100 : 38

Curing process:

- Curing: 24 h at room temperature or 2,5 h at 55°C
- Post curing: > 12 h at 55°C + 5°C

B. Resin EPR L20 / hardener EPH (former Bakelite company, today Momentive)

Resin	Hardener	Hardener (old designation)	Mixing Ratio (Weight-%)
L20	EPH196	VE2896	100 : 18
	EPH573	VE2723	100 : 23
	EPH960	SL	100 : 34
	EPH960/75	SL75	100 : 32
	EPH960/50	SL50	100 : 31
	EPH960/25	SL25	100 : 29
	EPH101	H91	100 : 27

Curing process:

- 24 hours at room temperature and 15 hours at 60°C
or
3 hours at 30°C - 40°C and 10 hours at 60°C

Important REMARK: In addition to this information the latest materials manufacturer instructions must be obeyed !

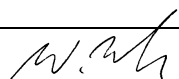
5. Approval Note

The technical content of this document has been approved as a change by EASA under the approval no. 10050187 dated 11.08.2014.

6. Weight and CG

Influence of repair on weight and balance has to be assessed and if required a new weight and balance report and control surface weight and balance report (Residual Moment!) has to be issued.

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II. PLANNING INFORMATION

7. Material and Availability

Required material may be ordered on request from the TC holder.

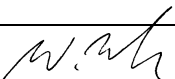
8. Special Tools

not required

III. NOTES

1. Repairs of spar caps made from GFRP or CFRP are only permitted with instructions from the TC holder and using original material (composite material supplied by the TC holder).
Metal fittings and composite parts, which can only be manufactured only in special moulds or device, which are required for a repair, may be purchased only from the TC holder.
2. The repair has to be supervised by approved inspectors (certifying staff) according to national rules. This inspector may decide if the existing documents and informations are sufficient for the planned repair. If needed, additional instructions have to be requested from the TC holder.
3. All accomplished instructions have to be documented in the inspection documents and the aircraft log book by certifying staff.
4. If you have sold your aircraft in the recent times, please forward the name and address of the new owner together with the serial number of the aircraft to us.
5. In case of questions please contact the holder of the type certification (TC holder):

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