Subject: Solar 40/30 profiles and ALG rivet

	Processed by	Verified by	Approved by
Signature:	***Mazzucato F.***	***Tresoldi A.***	***Martini M.***
Office:	***R&D***	***R&D***	***R&D***

TABLE OF CONTENTS

1 General information

1.1 General description

Mounting system for the installation of photovoltaic (PV).

1.2 Reference documents

Standards:
- UNI EN 755-2 «Alluminio e leghe di alluminio - Barre, tubi e profilati estrusi - Parte 2: Caratteristiche meccaniche»
- UNI EN 1999-1-1 «Eurocodice 9 - Progettazione delle strutture di alluminio - Parte 1-1: Regole strutturali generali»

Test reports:
- RP 008-18 “Rivetto ALG”

1.3 Application field

The system has been conceived for the fixing of PV modules on flat or pitched surfaces, especially building covers with corrugated metal sheets.

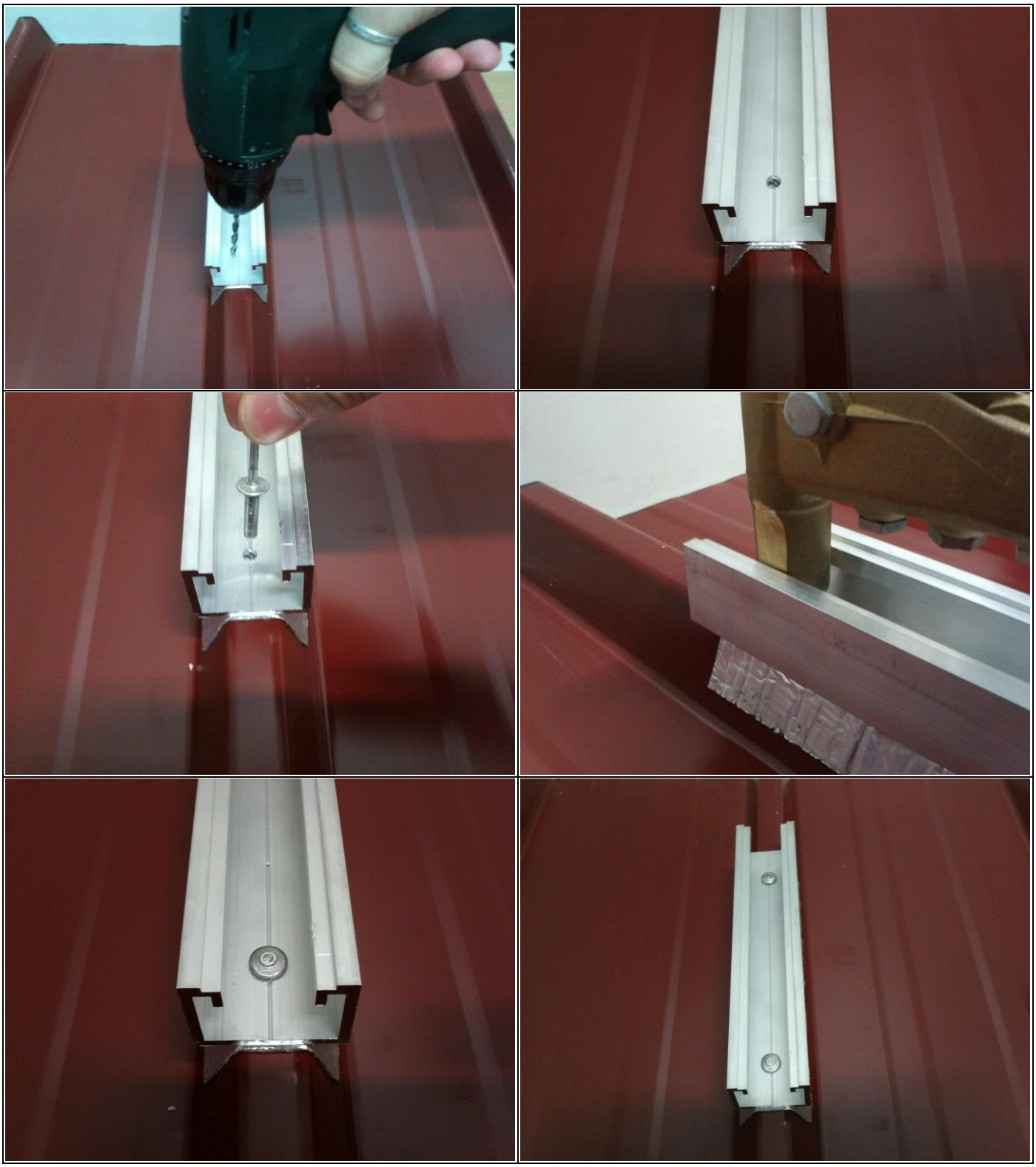
Designers and/or installators must check the durability of the system considering the environmental conditions, according to Eurocode 9.

1.4 Type of surface

The load bearing capacity of the system depends on the proper installation of the metal structure, in this case corrugated metal sheets.

2 Building requirements

2.1 Installation sequence



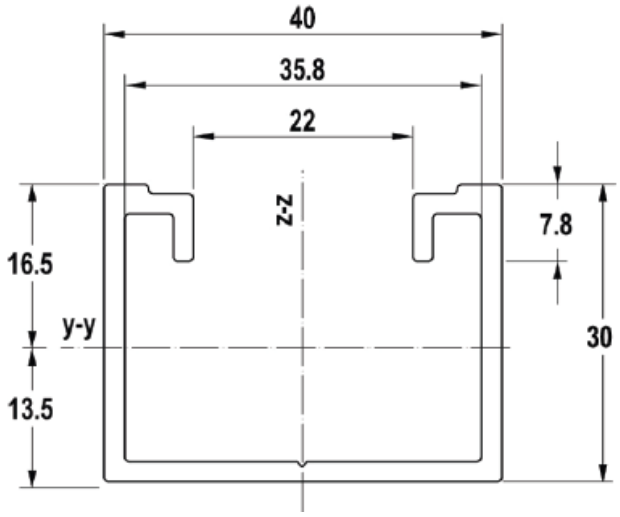
2.2 System components and accessories

n°	name	description	material	notes
1	Solar 40/30	Extruded aluminium profile	aluminium EN AW 6060 T6 UNI EN 755-2	
2	ALG	Rivet with seal	body: aluminium EN AW5019 shank: aluminium EN AW 2024 seal: neoprene rubber	
3	CG-INT	Butylic Tape 80x1 mm; 10 mt	butylene	See SDT130A10

3 Technical data

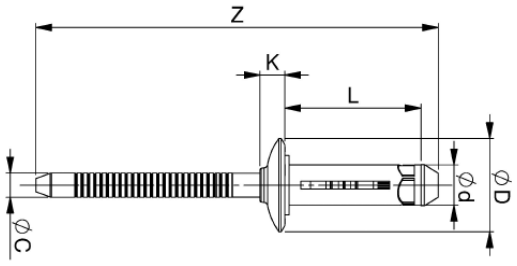
3.1 Main dimensions and mechanical features

- Solar 40/30 profile



weight W= 0,67 kg/ml
section S = 249 mm^2
moment of inertia Iy = 30300 mm^4
moment of inertia Iz = 63000 mm^4

- ALG rivet



Z	d	D	L	K	C	ø mm
TOLLERANZE / TOLERANCE						
±3	+0,2 -0,1	±0,5	+0,7 -0,5	+0,3 -0,15	±0,04	+0,1 0
54	**5,2**	**11,75**	**19,2**	**3,2**	**3**	**5,5**

3.2 Installation instructions

For the installation of ALG rivets, the recommended hole diameter is 5,5 mm; the total tightened thickness must be between 1,5 and 5,5 mm (profile thickness 2 mm).

Max. load per rivet

As result of the test activities in laboratory and building site the indications are as follows:

- Galvanized metal sheets thickness 0,5 mm: admissible tearing load 20 daN per rivet
- Galvanized metal sheets thickness 0,6 mm: admissible tearing load 24 daN per rivet
- Aluminium sheets: admissible load equal to 70% of the load on steel sheet with same thickness.

Safety factors applied are higher than 4.
In case of doubts regarding the quality or preservation of metal sheet, we recommend direct testing on site.

The butylic tape and the seal of the rivet avoid water infiltration; to complete the waterproofing, after the installation the upper part of the rivet must be sealed with “fischer SB – bituminous sealant ” or “fischer CG INT – butylic tape”.

Recommendations:

- Install the system with ambient temperature between 10° and 30°C (reduced stress due to profile expansions);
- Avoid to rivet profiles on not varnished zinc plated metal sheets (reduced risks of galvanic corrosion between aluminium rivets and steel sheet) ;
- In case of applications on sandwich panels, keep the rivets sufficiently far from free edges of the panels (as indication: distance 5 times higher than the max thickness of the panel).

As regards Solar 40/30 profiles (6 meters or 200 mm), we recommend especially to:

- Keep a distance not lower than 10 mm between profiles (to avoid stress in profiles and rivets due to the contact between the ends caused by thermal expansion;
- Install modules so that they to not stand vertically on more than one profile (to avoid stress on modules due to movement of the ends caused by thermal expansions);
- Installation can be with alternating rivets or double rivets (see drawing below - as indication: the fixing every 1, 2, 3 or more metal ribs depends on the shape of metal sheet, on loads, on dimension and orientation of modules);
- Modules can be fixed in continuous way, placing them on more profile pieces, without any particular prescriptions on the max. length of the rows (for these reduced lengths, the movements of profile ends caused by thermal expansions are within the movements in the installation phase between clamps and modules)

- All products must be used and installed strictly according to the instructions published by fischer Italia.

- Information and advices in this Technical Data Sheet are based on principles and calculations defined in fischer technical instructions, manuals, standards or other information hold as correct when it was written. Values resulted from tests made in lab conditions. User has responsibility to verify and control if site conditions, components, fixing devices, tools, etc. are complying with Technical Data Sheet conditions. Responsibility on product choice about final using appertain to the Customer.

- Under no circumstances is fischer Italia responsible for indirect, incidental or consequential damages, losses or expenses in connection with, or by reason of, the use of, or inability to use the products for any intention