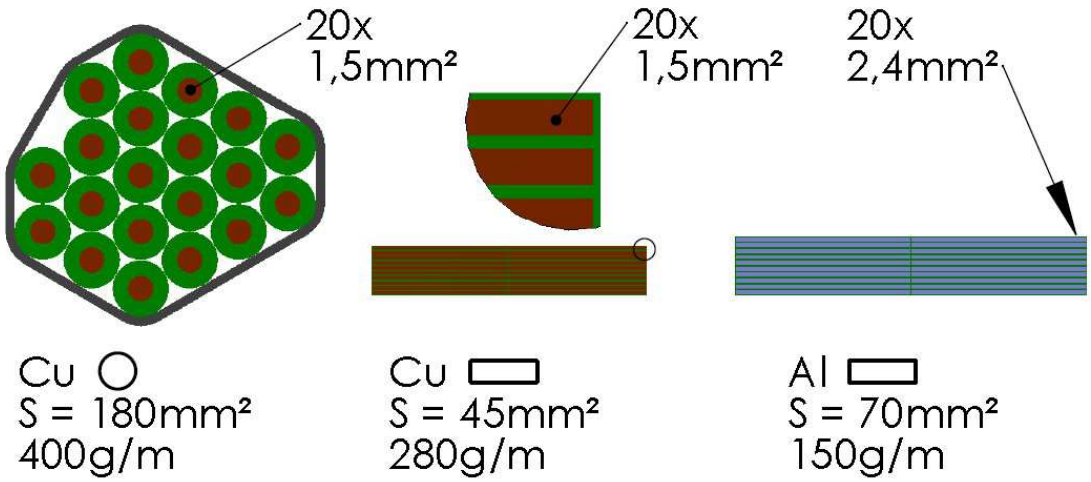


Fig. 1 Comparison: Flat strip, thin insulated cables vs. usual copper cables.

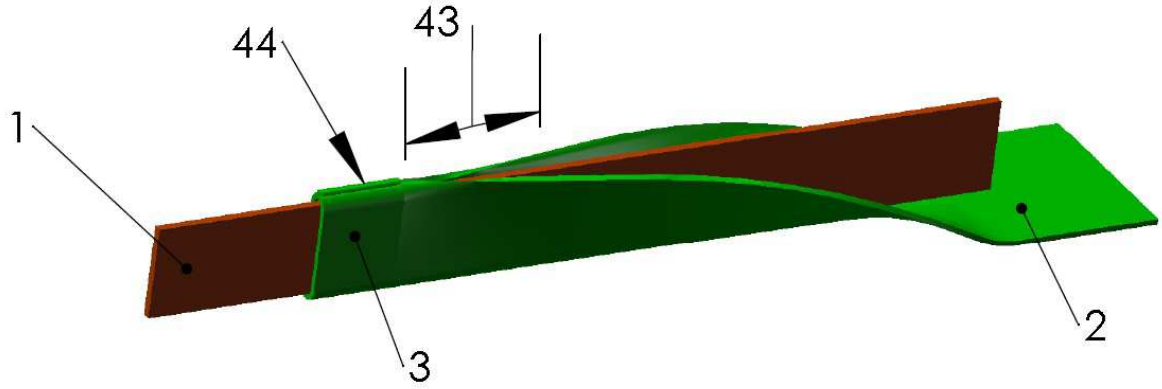


Fig. 2 How it's made, edge welding.

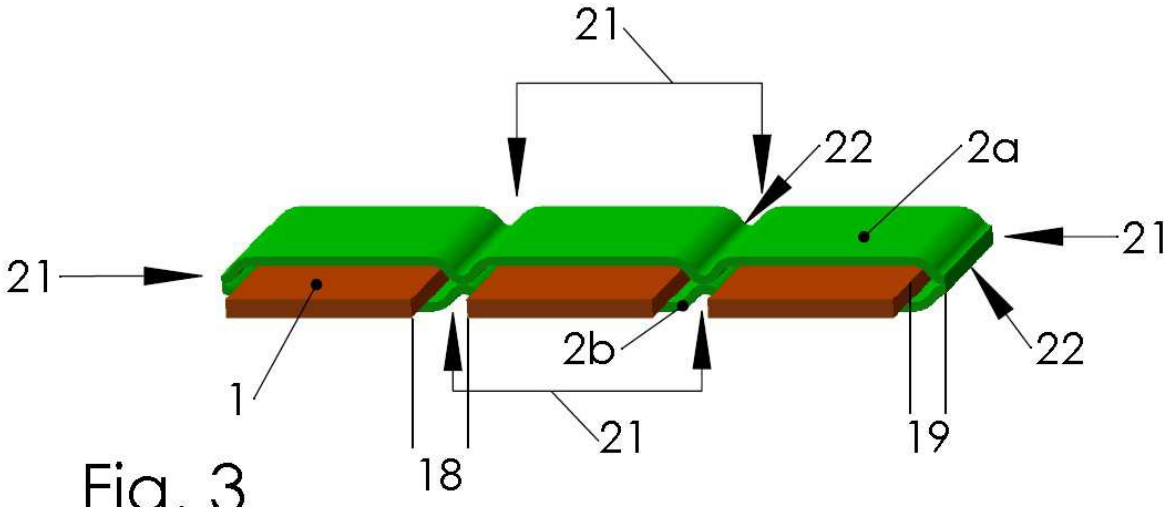


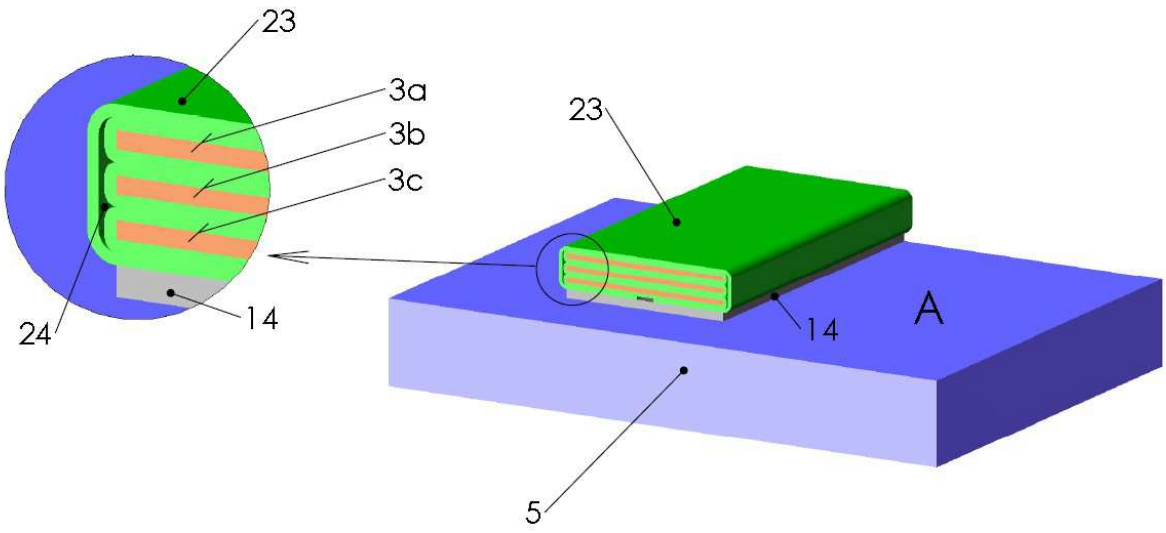
Fig. 3 Flat strip conductor with more current paths.

Indicative examples:

We will consider three variants of cables having 20 leads each with a resistance of 11mOhm/m, which include: a) usual copper wire, stranded and insulated, b) 36µm Mylar insulated copper strips and c) 36µm Mylar insulated aluminum strips, s. the table below: The total cross-section with insulation, 20 leads, in mm² is calculated from the cross-section of every insulated conductor, with different space factors from 0,8 for round leads and 0,96 for flat strips, these last giving an almost compact bundle with very little air spaces. Of course, the cross section of the aluminium flat strip is with 2,4 mm² higher than that of the copper leads (1,5 mm²) , to insure the same resistance.

Constitution	Leads	Metal cross-section, mm²	Total cross- section with insulation, 20 leads, mm²	Metal fill factor	Weight, g/m
Round cable,			20x7,5x/0,8	30/187	
Cu-wire stranded	20	20x1,5 =30	=187	**=0,16**	**400**
Cu- strip cable,			20x2,14x0,95	30/45	
Mylar insulated	20	20x1,5 =30	=45	**=0,66**	**280**
Al- strip cable,			20x3,2x0,95	48/67	
Mylar insulated	20	2,4x20 =48	=67	**=0,71**	**150**

Fig. 1 shows the difference in the needed space and the weight per meter in the three variants of cables shown above, having 20 conductors à 11mOhm/m.
The advantages of using thin insulated lead strips are evident. The Mylar foil insulation withstands at least 3 kV, and at temperatures much higher than the regular PVC insulation.



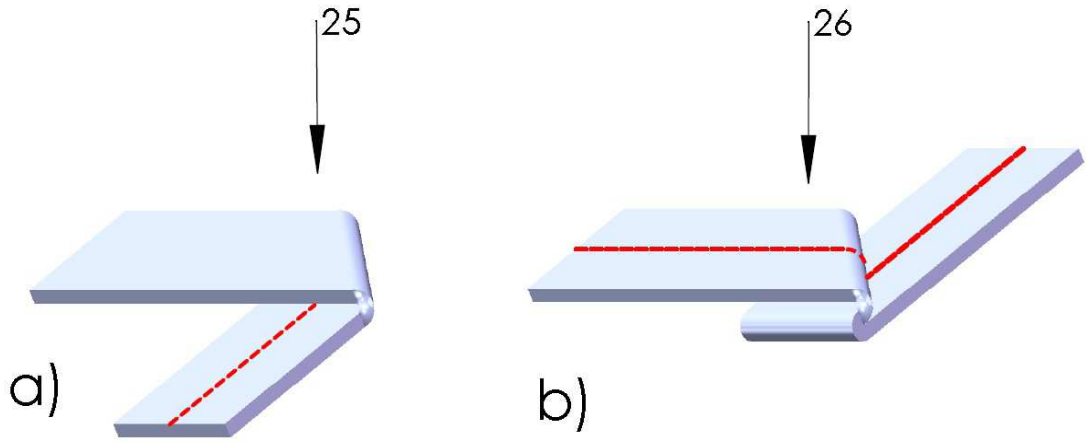
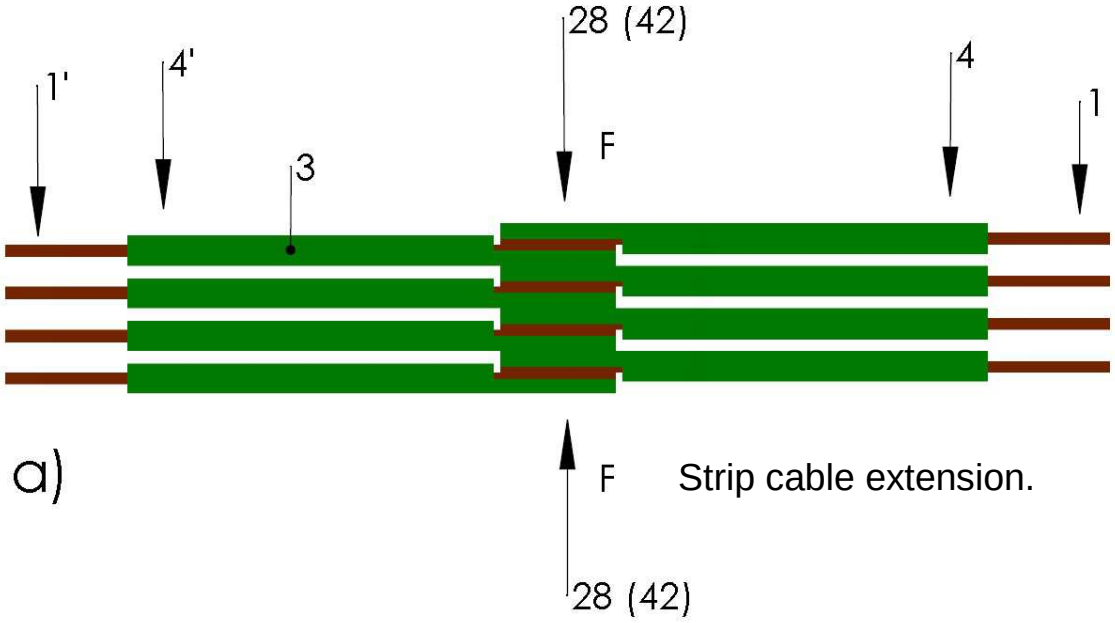
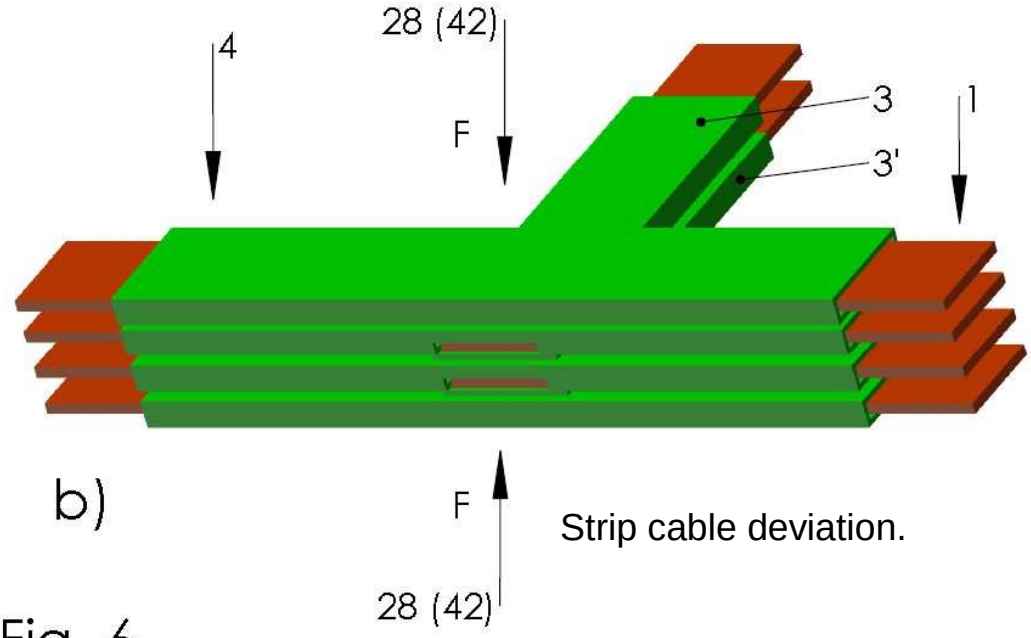


Fig. 5 Strip bending: simple and double ply.



Strip cable extension.



Strip cable deviation.

Fig. 6

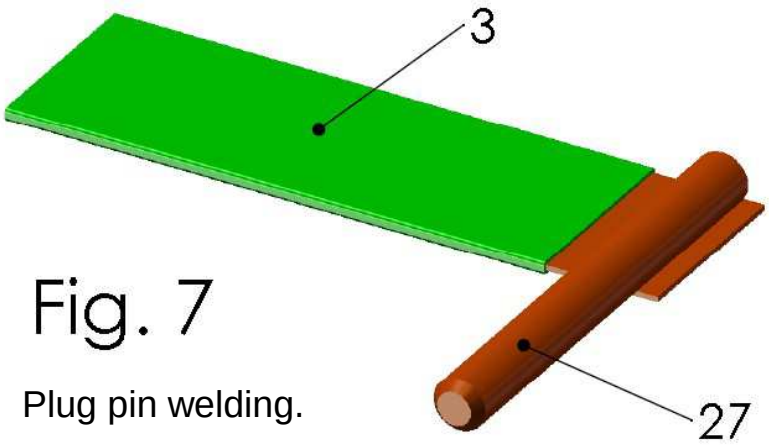


Fig. 7

Plug pin welding.

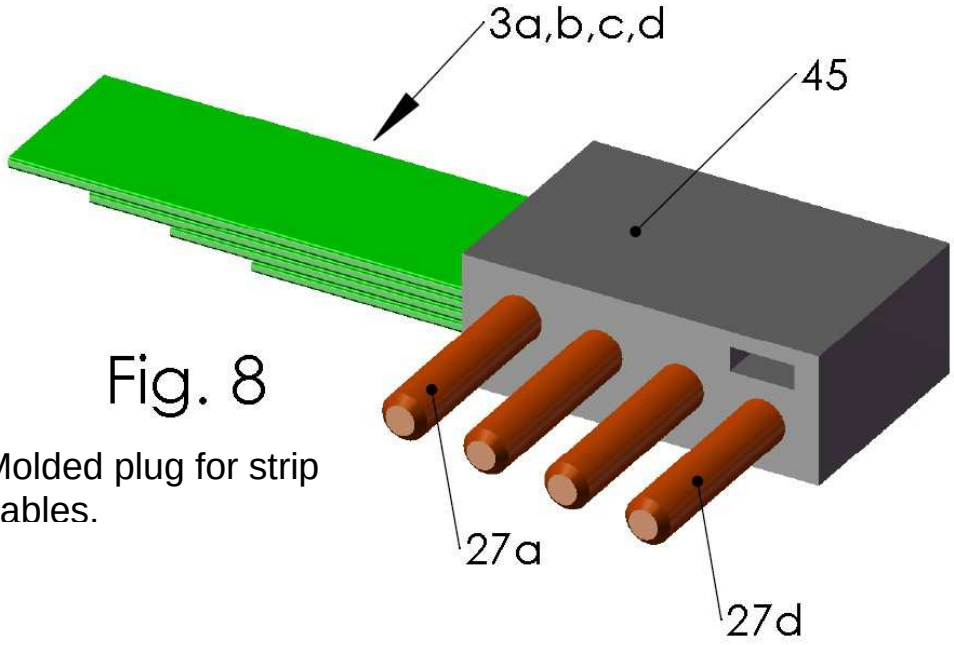
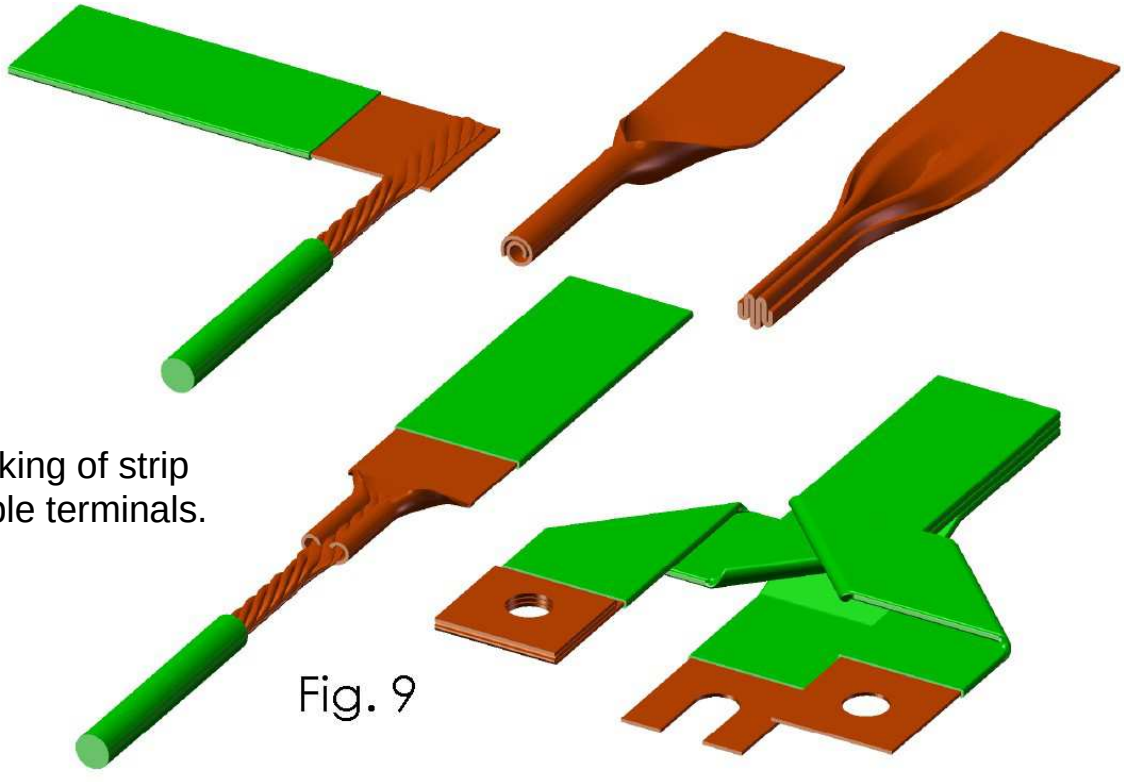


Fig. 8

Molded plug for strip cables.



Making of strip cable terminals.

Fig. 9