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CROSS-REFERENCE : ALUMINIUM – COPPER

The equivalent copper conductor size to that of an aluminium conductor can be estimated by the knowledge that the conductivity of aluminium to that of copper is approximately 61%. This is based on the resistivities of copper and aluminium, which are given in BS EN 60228 “Conductors in insulated cables and cords”, as $17.241 \Omega \cdot \text{mm}^2/\text{km}$ and $28.264 \Omega \cdot \text{mm}^2/\text{km}$ respectively. Hence, an equivalent copper conductor to 100mm^2 aluminium would be 61mm^2 .

ALUMINIUM METRIC SIZE	EQUIVALENT COPPER METRIC SIZE	NEAREST STANDARD COPPER SIZE
mm ²	mm ²	mm ²
10	6.1	6
16	9.8	10
25	15.3	16
35	21.4	25
50	30.5	35
70	42.7	50
95	58.0	50/70
120	73.2	70
150	91.5	95
185	112.9	120
240	146.4	150
300	183	185
380*	231.8	240
400	244	240
480*	292.8	300
500	305	300
600*	366	400
630	384	400
740*	451.4	400/500
800	488	500
960*	585.6	630
1000	610	630
1200*	732	800

* = Solid Sectoral Aluminium Conductor

Where equivalent metric size is in-between standard metric sizes, it is advisable to use the larger metric size if replacement is required, although this is dependent on current load requirement, cable type, installation condition etc.



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A handwritten signature in blue ink that reads "M S Fordham".

M.S.Fordham
Technical Manager
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