Energy in transition

Compliant with IEC 61238-1-3

Crimping solution for railway application

sicame

OEM

About us

sicame GROUP

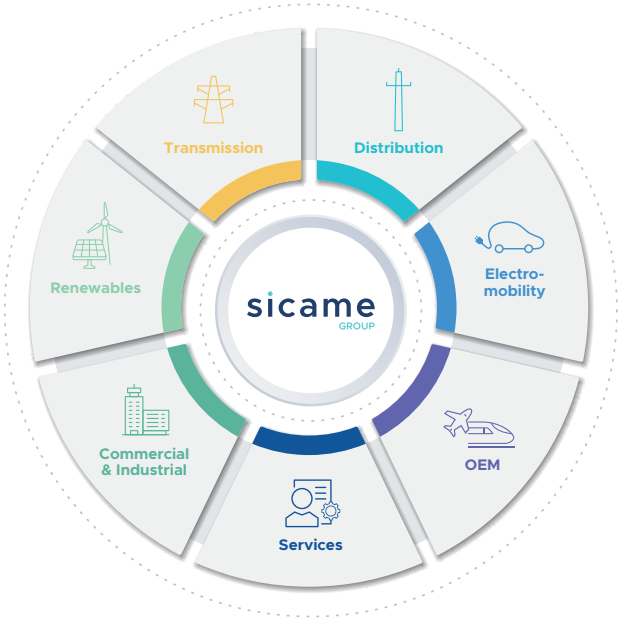
Sicame Group is one of the key players in the electrical equipment business worldwide. It has been able to adapt and develop to support the continuous evolution of electricity infrastructure in France and around the world, and become the largest independent entity in its sector.

A true player in the energy transition, it offers its customers new products and services to improve energy efficiency, deal with environmental risks and support the development of electric vehicle and solar power plant markets.

+65
years of worldwide success

525 M€
2022 turnover

3,600
employees



Our fields of activity

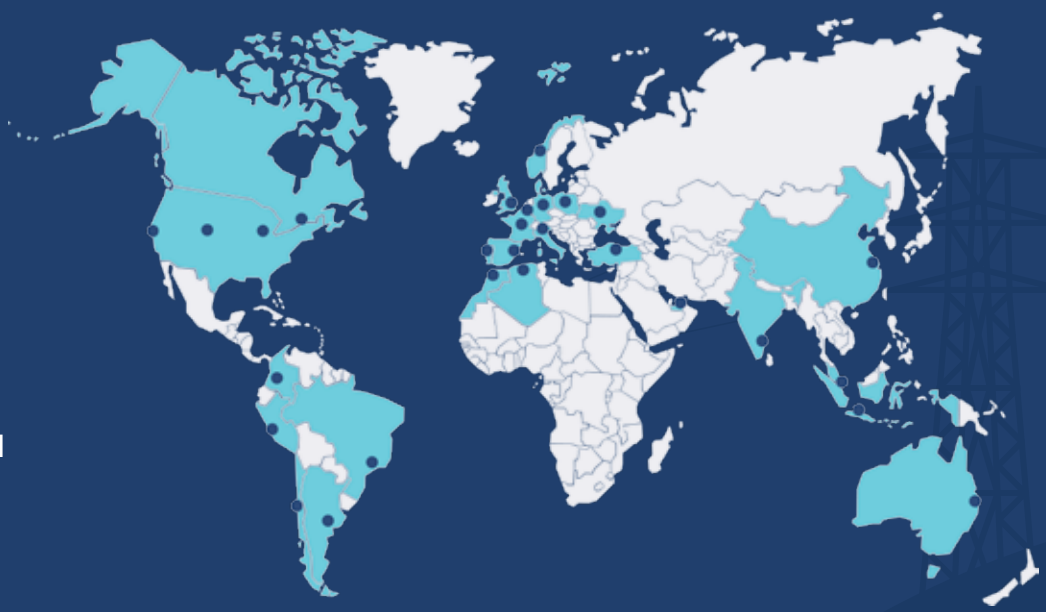
Sicame Group is specialised in **products and services** related to transmission and distribution of **electrical energy**, renewables, electro-mobility, safety equipment and industrial applications.

5 continents

26 countries

50 companies around the world

Products distributed in **157** countries



Crimping solution for railway applications according to IEC 61238-1-3

A new deal for power connectors of railway rolling stock.

The evolution of cables and the international requirements as per the IEC61238-1-3 standard have prompted the development of a new crimping solution for our range of
TN railway lugs.
This technology offers superior characteristics to hexagonal crimping in terms of cross-sectional reduction rate, tensile strength and temperature rise.

- It eliminates the problems associated with the use of flexible cables.
- It is less sensitive to the scattering of effective cable cross-sections found in different manufacturers.
- It offers optimum reliability by conforming to the most demanding standard on the market.

Focus on the flexible cable problem

- Flexible cables have larger diameter strands for equivalent cross-sections.
- This requires the use of larger drums, which results in a lower filling rate.
- For the same crimping, lower filling ratio results in an insufficient cross-sectional reduction rate, voids between the crimped strands and poor electrical and mechanical performance.
- In this situation, the hexagonal crimp shows its limits with the appearance of sharp edges and lower cross-sectional reduction rates.

B-crimp technology overcomes these constraints and to move to a higher level of crimping

REAL SECTION OF THE CONDUCTOR

For rolling stock, the requirements of the international standard IEC61238-1-3 cover those of French standard NFF00-363.
The IEC includes 1000 ageing cycles and imposes statistical criteria on the dispersion of the specimens and their ageing.

It also incorporates a series of short circuits.

200 cycles thermal

6 short-circuit shots

800 cycles thermal

Mechanical testing (non-destructive)

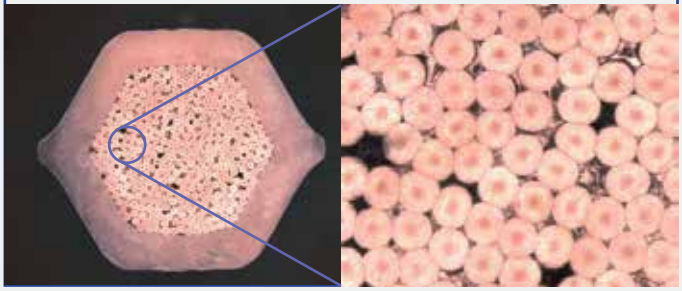
Application of strict requirements on the evolution and homogeneity of resistance of the connections during thermal cycles

Tensile strength check (N) = 60 x cross section (mm^2)

Hexagonal crimping

Hexagonal crimping is widely used in industry and has been developed mainly for Class 2 rigid cables where it offers high crimping strength.

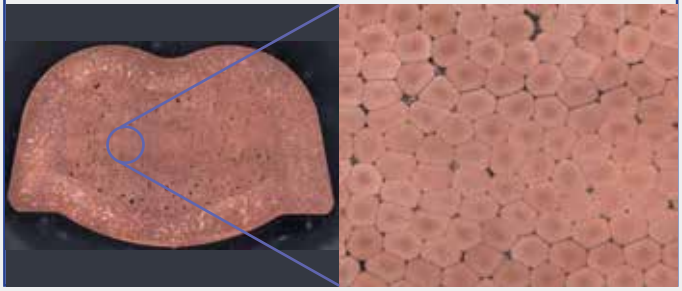
Hexagonal crimping of flexible cable is not suitable because of the low compaction rate.



B-crimping

Used in the automotive industry, the B-crimp is particularly suitable and optimised for crimping of flexible cables.

The B-crimp has a high compaction rate.



B-Crimp, a proven technology for over 20 years in the automotive industry

Thanks to its experience in the automotive sector, MTR has mastered the technology of B crimping technology, particularly on flexible cables, and the optimisation of compaction and variability of sections to obtain :

- Optimised compaction.
- Increased electrical performance.
- Uniform strand compression.
- Tensile performance not sensitive to cable cross section.
- No sharp edges.

BTN compatibility die with ranges from 10 to 300 mm²

Ref. lug	Ref. die	Number of crimp	Crimping tools
ELS	C12BELS	1	 ESU137
FLS	C12FELS		
TN25	C12BTN25		
TN35	C12BTN35		
TN50	C12BTN50		
TN60	C12BTN60		
TN70	C12BTN70		
TN95	C12BTN95		
TN120	C12BTN120		
TN150	U21BTN150	2	 VF210
TN185	U21BTN185		
TN240	U21BTN240		
TN300	U21BTN300		

EXAMPLE OF 1-STEP CRIMPING

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