

WIRES - TECHNICAL & APPLICATION DATA

Technical Data Sheet 05E

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APPLICATIONS

Generally, used for its electrical and thermal conductivity: Applications include the creation of conductive surfaces or solderable connections on resistors, carbon brushes, discharge electrodes and earthing conductors on railway carriage axles. It is used for EMC and static discharge screening on paper conveyors. Its softness makes it useful for surfacing printing rollers etc. Copper is also used for decorative purposes.

WIRE DETAILS

Wire Size : 1.6mm, 2.0mm, 2.3mm (11g B&S), 3.17mm (1/8")
Composition : Copper 99.9% min. purity

PHYSICAL PROPERTIES OF COATING*

Adhesion : 10.00 MPa (1450 psi)
Density : 7.54 gm/cc
Melting Point : 1082°C (1980°F)
Hardness : 75 HB, 100-115 HB may be obtained under certain conditions, 161 knoop 100.
Conductivity : Coating conductivities lie between 50% and 80% of the wrought material.

* The physical properties shown above are given as a guide only. In practice, the values achieved are dependent on the spraying parameters, the equipment used, surface preparation etc.

TYPICAL PERFORMANCE FIGURES*

PERFORMANCE	FLAME SPRAYING	ARC SPRAYING
Throughput	1 – 4.5 Kg/Hr	5 Kg/Hr/100Amps
Efficiency	75 - 80% Approx	75 - 80% Approx
Weight of Wire Required	1.10 Kg/m ² /100μ	1.10 Kg/m ² /100μ

* The above data is given as a general guide only. Reference should be made to the Operating Equipment Manual for greater detail.

TYPICAL SPRAYING PARAMETERS

(See Equipment Manuals for details)

a) Combustion Gas Spraying Metallisation Mark 73, 61 and 66E Pistols

FUEL GAS	MIXING BLOCK NOZZLE AIR NIPPLE	GAS PRESSURE	OXYGEN PRESSURE	FLOWMETER SETTINGS	AIR PRESSURE
Propane	Ref Pistol Manual	1.7 bar	2.5 - 2.7 bar	Ref Pistol Manual	4.5 bar
Acetylene	Ref Pistol Manual	1.03 bar	1.5 - 1.9 bar	Ref Pistol Manual	4.5 bar

b) Electric Arc Spraying

Metallisation Arc Spray Pistols	:	140, 340 and 528E
Air Pressure	:	5.5 bar
Voltage	:	30-34V
Current	:	Dependent on wire speed

The above data is given as a general guide only. Reference should be made to the operating equipment manual for greater detail.

FINISHING

Copper coatings are usually finished by machining or grinding.

To comply with Health and Safety Legislation you are recommended to consult the MSDS referring to this material.