

Technical Information

CADWELD® THE MOLECULAR BOND

CADWELD® EXOTHERMIC CONNECTION

A welding process that eliminates the connection by forming a molecular bond.

Connections are the weak point of all electrical circuits and especially earthing circuits subjected to aging and corrosion. The capacity of an earthing circuit to protect the safety of personnel depends on the quality of the connections made.

BS 6651 (1992) STATES :

"Any joint other than welded represents a discontinuity in the current conducting system and is susceptible to variation and failure."

CADWELD® – The Molecular Bond

The CADWELD® process provides a way to produce copper/copper, copper/galvanized or plain steel, copper/copper clad steel, copper/bronze/brass/stainless steel, steel/steel, molecular bonds with no external energy or heat source.

The principle consists of bringing together a welding materials and ignition agent in a suitable graphite mould.

The reduction of copper oxide by aluminium produces molten copper and aluminium oxide slag at extremely high temperatures.

The shape of the mould, its dimensions, and the size of the welding material, are all dependent on the items to be welded.

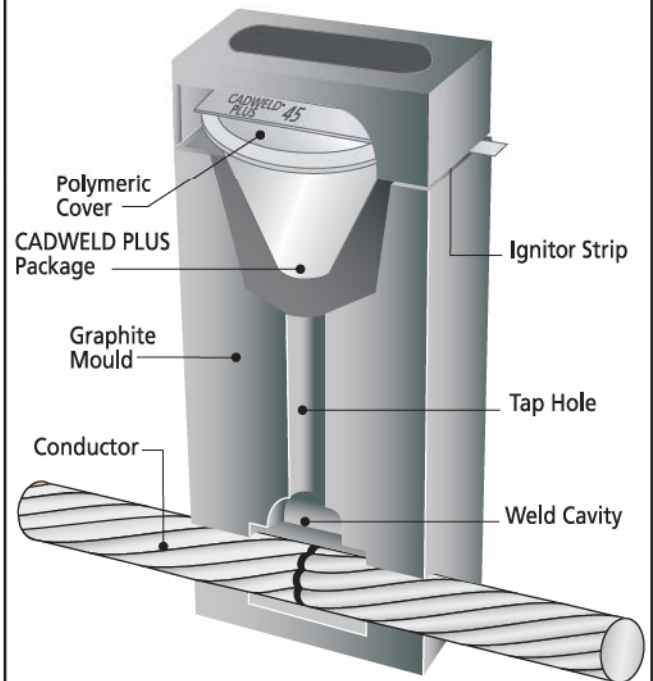
Installation Is Easy!

4 Simple Steps For Permanently Welded Electrical Connections

The CADWELD PLUS Control Unit initiates the reaction of the metal crucible. The standard unit includes a 1.8 meter (6-foot) high temperature control unit lead. The lead attaches to the ignition strip using a custom made, purpose-designed termination clip.

After the termination clip is installed on the ignition strip, the installer pushes and holds the ignition button to start a charging and discharging sequence. Within a few seconds the control unit sends a predetermined voltage to the ignition strip and the reaction is initiated.

THE CADWELD® MOULD USING CADWELD PLUS



1
Insert CADWELD PLUS package into mould



2
Attach control unit termination clip to ignition strip



3
Press and hold operating switch and wait for the ignition



4
Open the mould and remove the expended steel cup – no special disposal required

CADWELD PLUS for Grounding Applications

CADWELD PLUS Part Number	Article Number	Size Identification Ring Color	Traditional Welding Material Part Number (Clear Cap)	Box Qty.
15PLUSF20	165700	Black	15	20
25PLUSF20	165701	Red	25	20
32PLUSF20	165702	White	32	20
45PLUSF20	165703	Light Blue	45	20
65PLUSF20	165704	Dark Green	65	20
90PLUSF20	165705	Gray	90	10
115PLUSF20	165706	Orange	115	10
150PLUSF20	165707	Dark Blue	150	10
200PLUSF20	165708	Yellow	200	10
250PLUSF20	165709	Purple	250	10
300PLUSF20	165710	Light Green	use 2 x 150	10
400PLUSF20	165711	Brown	use 2 x 200	10
500PLUSF20	165712	Light Brown	500	10



PLUSCU



Baffle Cover Kit



PLUSCULD

CADWELD PLUS Patent Numbers 6,553,911 6,835,910 6,703,578

CADWELD PLUS for Cast Iron Applications

CADWELD PLUS Part Number	Article Number	Size Identification Ring Color	Traditional Welding Material Part Number (Orange Cap)	Box Qty.
25PLUSXF19	165718	Red	25XF19	20
32PLUSXF19	165719	White	32XF19	20
45PLUSXF19	165720	Light Blue	45XF19	20
65PLUSXF19	165721	Dark Green	65XF19	20

Gram weight PLUS welding material type i.e. 45PLUSF20

Accessories

Part Number	Article Number	Description
PLUSCU	165738	CADWELD PLUS Control Unit
PLUSCU15L	165745	CADWELD PLUS Control Unit with 4.6 meters (15 ft.) Lead
PLUSCULD	165739	CONTROL UNIT Replacement Lead) 1.8 meters (6 ft.)
PLUSCULD15	165746	CONTROL UNIT Replacement Lead 4.6 meters (15 ft.)
MC2X2KIT	165740	Kit, Baffle Cover, Graphite - 51 mm X 51 mm (2" X 2") Mould
MC25X3KIT	165744	Kit, Baffle Cover, Graphite - 64 mm X 76 mm (2½" X 3") Mould
MC3X3KIT	165741	Kit, Baffle Cover, Graphite - 76 mm X 76 mm (3" X 3") Mould
MC4X4KIT	165742	Kit, Baffle Cover, Graphite - 102 mm X 102 mm (4" X 4") Mould

CADWELD® MULTI

4 Easy steps for multiple, permanently welded, electrical connections



Step 1 Layer batting and variable conductor sizes to be welded into dry mould



Step 2 Close mould and drop metal disk in place



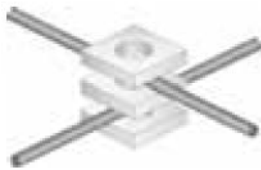
Step 3 Dump welding material and tap bottom of container to release starting material



Step 4 Close the cover and ignite with flint ignitor. Open the mould after 10 seconds



The CADWELD® MULTI combines a versatile mould block and a range of gaskets (batting) to allow numerous different welded connections to be produced without the need to change the mould for each connection type.



The process is similar to the traditional CADWELD® with one distinct difference... there is no need to change the mould for different connection types.

The whole process is complete in about one minute. The connection table details the gasket quantities required for each weld.

CADWELD MULTI Available Items

Description	Part No.	Article No.		Box Qty.	Unit Weight (kg)
Kit for 20 welds, in metallic box 14" x 13" x 6" (360 x 330 x 160 mm)	KITCDM01	167780		1	10.00
Kit for 20 welds using CADWELD PLUS, in metallic box (Control Unit sold separately) 14" x 13" x 11" (360 x 330 x 280 mm)	KITCDM01 PLUS	167781		1	11.50
Made from the following items which can be ordered separately:			Qty. in Kit		
Mould	CDM01	234720	1	1	1.000
Handle Clamp	FMTDM01	120882	1	1	1.100
Set of 33 battings/gaskets	SCDM01	120886	2	1	0.200
Welding material 90*	90	163040	2 boxes of 10	10	0.090
CADWELD PLUS Welding Material**	90PLUSF20	165705	2 boxes of 10	10	0.158
Toolset TS-6A, including: • gloves • cardcloth brush • soft brush • flint ignitor	TS6A	169930	1	1	0.490

* in KITCDM01 = Traditional CADWELD MULTI Kit
** in KITCDM01PLUS = CADWELD PLUS MULTI Kit