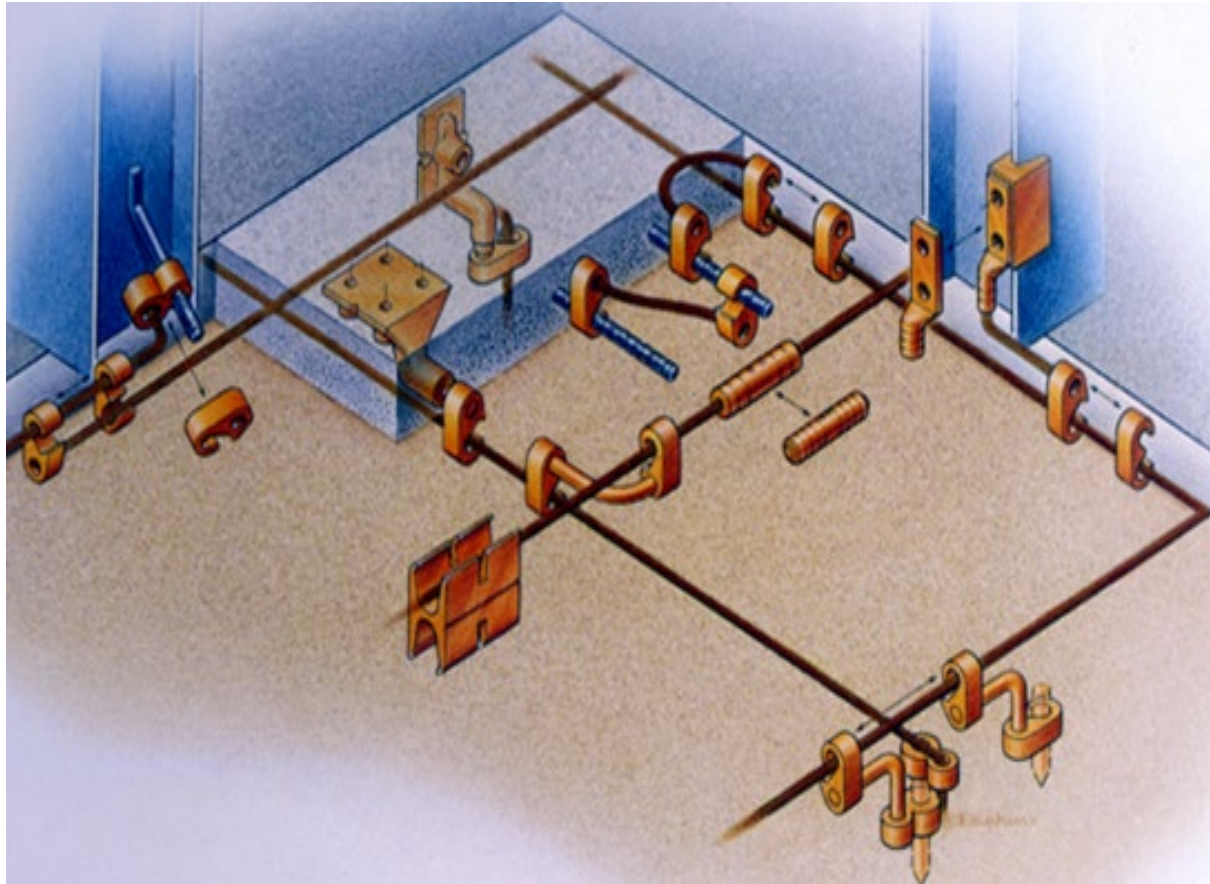
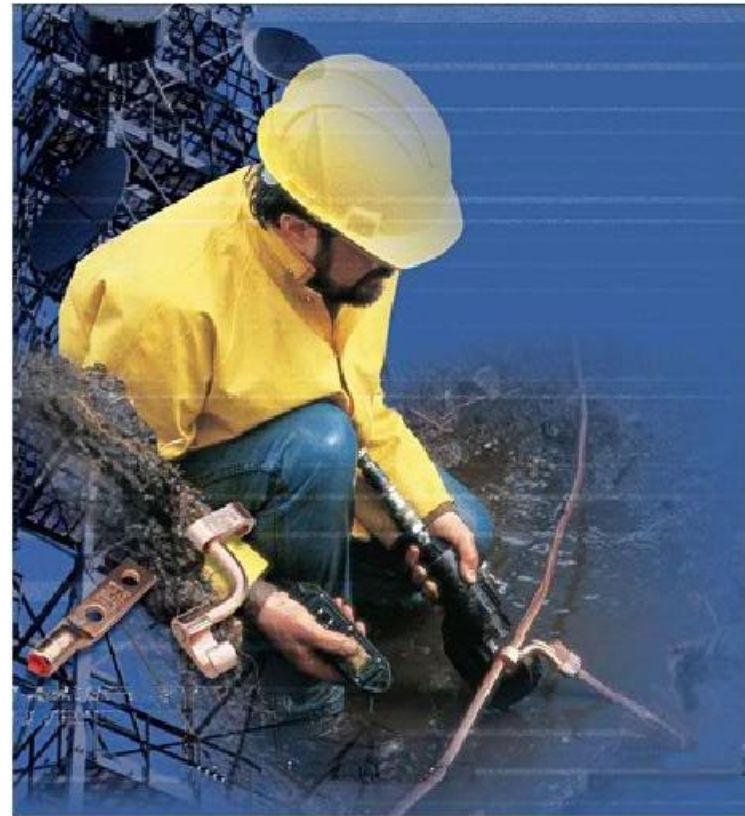


LANA OTT



- **HYGROUND® - BURNDY®'s compression type connectors.**
- Designed to apply and maintain pressure or force on a given conductor by compressing the connector around the conductor.
- The process provides very high contact pressure resulting in low contact resistance.
 - Made in The USA.
- **BURNDY® Compression Tools**
 - Suitable compression tools are used to make the connection.
 - Made in The USA.

Launched 1974



HYGROUND® Features

- Made of pure wrought copper, identical to copper conductor.
- All are prefilled with PENETROX™ “E” oxide inhibitor and sealed in a clear poly sheet.
- Die index and conductor range is marked on every connector.
- Die index is embossed on the connector after completion of the crimp.
- Range taking connectors minimize inventory.
- Installed with ordinary hydraulic tools.
- Non-hazardous process. No heat or smoke.
- Connectors can be installed in all types of weather.

- Each connection takes **less than 3 minutes** to complete.

- **Shippingport Nuclear Power Plant – 1958 – FIRST TO MARKET**

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- **Utility – NUCLEAR – WIND - SOLAR**
- **Commercial and Industrial**
- **Engineering and Construction**
- **Telecommunication**
- **Transportation**
- **Petrochemical plants**
- **Government Projects**



BURNDY® HYGROUND® is applicable to all agencies below:

- NEC



- NFPA



- IEEE 837



- Underwriters
Laboratories



- CSA



- Federal Government

NEC Article 250, Section 250

“ It shall be permitted to splice the grounding electrode conductor by means of irreversible compression – type connectors listed for the purpose or by exothermic welding process.”

Mechanical Tests

- Pullout (tensile) test
- Electromagnetic Force (EMF) withstand test

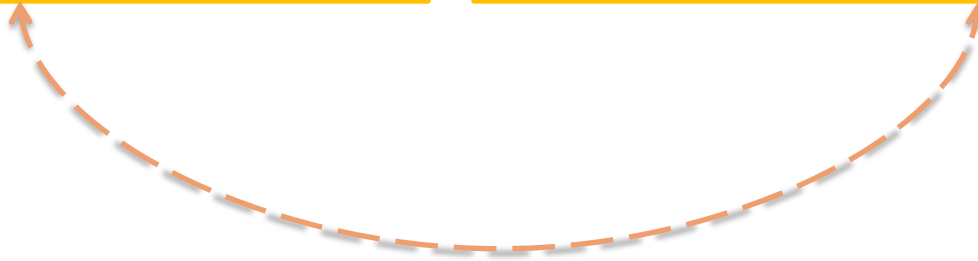
Sequential Tests

Acid Group

- Current-Temperature cycling
- Freeze-Thaw cycling
- Corrosion (Nitric Acid)
- Fault Current

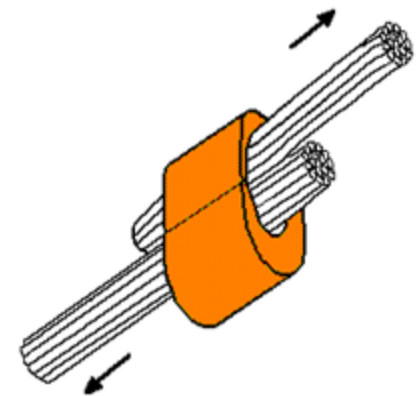
Alkaline Group

- Current-Temperature cycling
- Freeze-Thaw cycling
- Corrosion (Salt Spray)
- Fault Current



The IEEE 837-2014 standard provides direction and methods for qualifying permanent connections used for substation grounding. Its intent is to assure the user that a connection meeting the requirements of the IEEE 837-2014 standard will perform satisfactorily over the lifetime of the installation.

PULL OUT FORCE - lbf (N)		
Conductor	IEEE Std 837	UL 467
8 AWG (10 mm ²)	150 (668N)	90
1/0 (50 mm ²)	300 (1335N)	250
4/0 (100 mm ²)	500 (2225N)	450
500 kcmil (240mm ²)	1000 (8900N)	800



HYGROUND® Vs. Mechanical Connectors

- **HYGROUND® (Compression)**

- Range taking
- Can be installed in all weather conditions
- Time saving.
- Easy to install and do not require special training.
- Cost Effective
- Can be inspected easily.



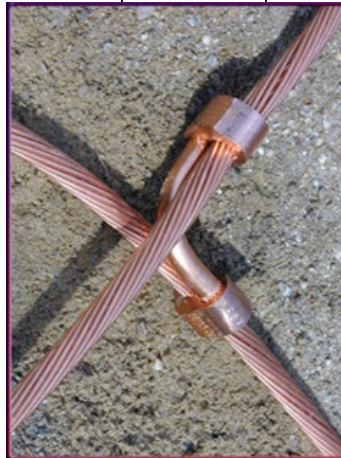
- **Mechanical**

- Not acceptable when connector is subject to extreme conditions like vibration.
- No special tooling
- Removable
- Easy to install
- Relies on proper torque applied to connection hardware.

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- **HYGROUND® (Compression)**

- Range taking
- Can be installed in all weather conditions
- Time saving.
- Easy to install and do not require special training.
- Cost Effective
- Can be inspected easily.
- No galvanic corrosion



- **Exothermic**

- Each mold is specific for a specific connection.
- Cannot be used in damp or wet conditions.
- May need “Hot Work Permit”; potential hazards of fire.
- Training required
- Time consuming precautions are required.
- Difficult to Inspect

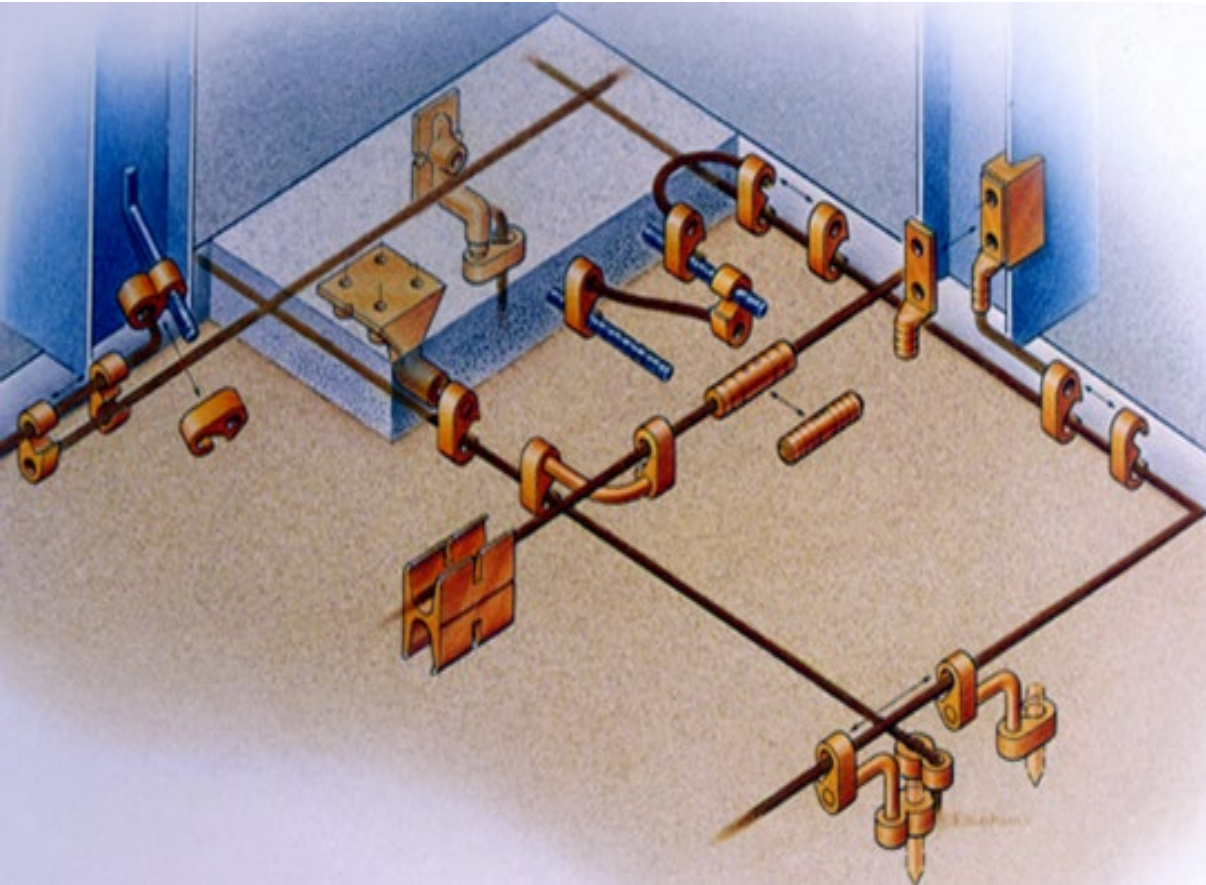
Advantages over Exothermic

- **Can be used indoors**
 - Produces no potentially hazardous heat .
 - Will not ignite flammable materials that may be nearby
- **Money Savings**
 - Tooling life
 - Range-taking connections
 - Lower labor costs
- **Time Saving**
 - Exothermic requires longer set up time.
 - Weather can postpone job site work for days with exothermic option.
- **Durability**
 - Exothermic connections susceptible to installation errors
 - Weather precautions are time consuming when using exothermic products

Cost Analysis

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Typical Application Wire Sizes Cable/Ground Rod	Burndy allows additional ranges	BURNDY®			EXOTHERMIC			\$ Saved if using Burndy Hy-Ground
		Material Cost (Trade Price) Per 100*	Labor Cost Per 100	Burndy Installed Cost	Material Cost (Trade Price per 100	Labor Cost per 100	Exothermic Total Installed Cost per 100	
4/0-4/0	3/0-250	678.51	199.86	878.37	810.00	985.51	1,795.51	917.14
2 str.-2 str.	6 sol.-2 str.	264.29	199.86	464.15	300.00	985.51	1,285.51	821.36
1/0-2 str.	1/0-2 str.	500.00	199.86	699.86	300.00	985.51	1,285.51	585.65
2/0-2 str.	2/0-2 str.	642.86	199.86	842.72	415.00	985.51	1,400.51	557.79
1/0-2 str.	4/0-2 str.	642.86	199.86	842.72	520.00	985.51	1,505.51	662.79
1/0-5/8"	1/0-5/8	1,321.00	199.86	1,520.86	415.00	985.51	1,400.51	(120.35)
4/0-3/4"	4/0-3/4	1,392.86	199.86	1,592.72	415.00	985.51	1,400.51	(192.21)
4/0-2 str.	4/0-2 str.	1,071.43	199.86	1,271.29	650.00	985.51	1,635.51	364.22
4/0-4/0	2 str.-250	1,071.43	199.86	1,271.29	940.00	985.51	1,925.51	654.22
Total Installed Cost				\$ 9,383.98			\$ 13,634.59	\$ 4,250.61
				Savings while using HYGROUND® vs. Exotherm 31.18%				



Connection Types

- **Cross connections**
- **Cable to Ground rod**
- **Cable to structural steel**
- **Tap**
- **Splice**
- **Terminals**
- **Grounding Plate**

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- **Fig C Connector**

- Can be used for tap or cross connections
- Can be used with copper clad rods!
- Range: #6 solid through 500 kcmil
- Acceptable for direct burial in earth or concrete.
- UL 467 Listed



- Can be used as a tap connector or tap splice connector
- Cable to cable, cable to rod or cable to rebar connections
- Range: #8 solid through 500kcmil.
- Ground Rod : 1/2 in. 5/8 in. and 3/4 in. (copper bonded)



YGHR-C Connector

• Ground rod to Cable connector

- Range Taking
- UL 467 listed
- Acceptable for direct burial in earth or concrete



• For continuous run and tapping

- Up to 3 conductors to ground rod.
- Designed for telecom applications
- Acceptable for direct burial in earth or concrete.
- Meets requirements of NEC, OSHA, UL and telecom industry.



YGL-C Connector

- Designed for cross connections and for “L” and “T” connections
- Cable to cable, cable to rod or cable to rebar connections
- Range: #6 solid through 500 kcmil.
- Only 6 connectors and 4 dies are required to install all combinations. **REPLACES 129 MOLDS!**



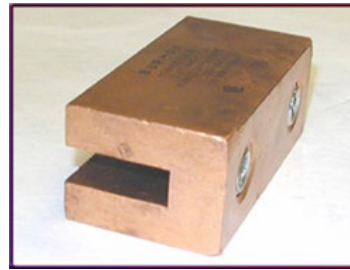
YGLR - C Connector

- Gridlok™ - Ground rod to grid connector
- Rotating elements facilitate installation
- Range: #2 through 500 kcmil.
- Ground rod sizes: 1/2 in., 5/8 in. 3/4 in. and 1 in.

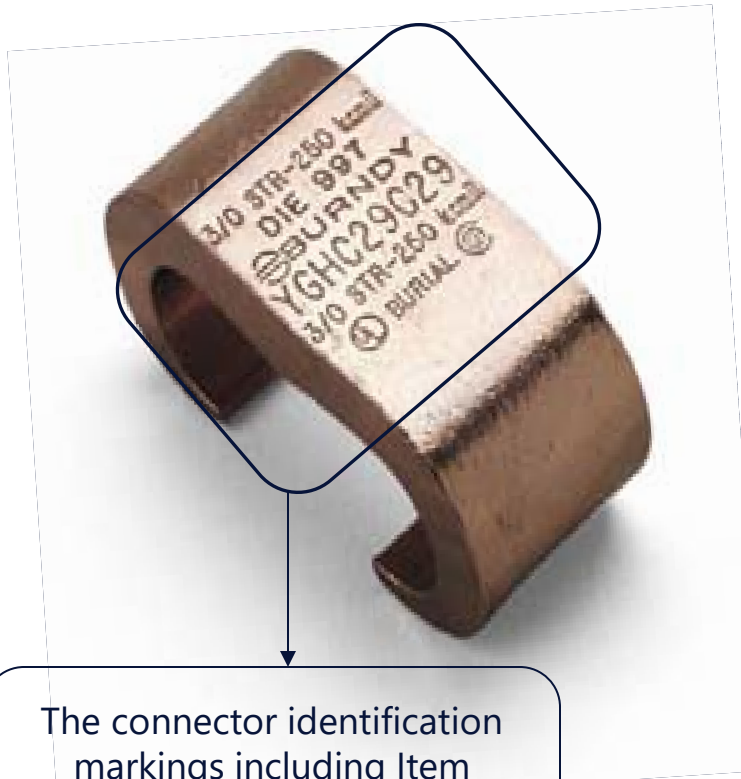


YGIB I-Beam Connector

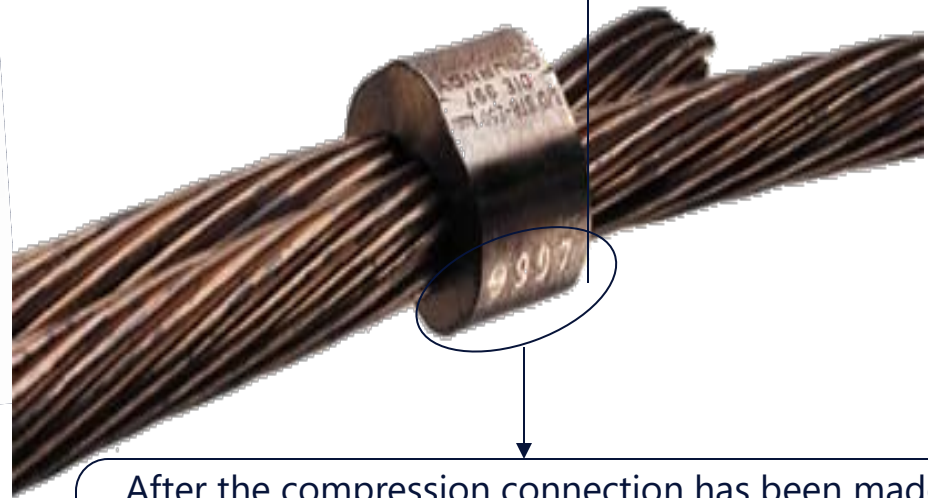
- GroundLink™ - to be attached directly to structural steel.
- Standard or Wide flange version available.
- Made with high conductivity wrought copper and pre-filled with PENETROX E compound and strip sealed.
- No More Welding
- No “Hot Work Permit”
- Standard tooling
- Inspection point for potential testing



HYGROUND® is Easy to Inspect



The connector identification markings including Item Catalog #, Conductor ranges and Installation die



Embossed Number shows that output force used to make compression connection was correct.

After the compression connection has been made, embossed die set number should match exactly as noted on the connector. This confirms that correct die set has been used for making the connection.

TIME TO CRIMP!

