



Technical Topics

ISSUE: 10-91 Page 1 of 2
TOPICS: Coaxial and Twin
Lead Firing Cables

High Voltage Firing Cable

When firing EBW detonators it is important to use pre-tested, high voltage firing cable to connect the high voltage output of the fireset to the EBW detonator. This is necessary since firing sets, sold or approved by RISI, operate at voltages as high as 4,000 volts DC. In addition, the high voltage applied to the detonator is in the form of a very fast rising pulse which can actually exceed the capacitor voltage for a short period of time. The practice of using low voltage blasting wire for EBW firings is not a good idea since it can result in insulation breakdown and detonator failures. We at RISI strongly recommend the use of high voltage wire and cable for all EBW firings.

Twin Lead Cable

"Twin-Lead" cable from RISI is similar in appearance to common "Blasting Wire." The difference lies in the voltage rating. Blasting wire is rated at about 250 volts DC, while RISI "Twin Lead" is a true high voltage cable tested 100% at 6,000 volts DC.

Type "C" Coaxial Cable

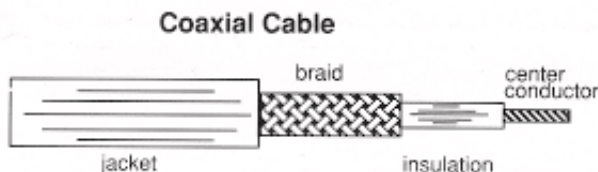
"C" cable is a high voltage, coaxial cable with ideal electrical characteristics for use in EBW detonator firing applications. The relatively low inductance of "C" cable, permits reliable EBW firing with cable lengths up to 300 feet compared to a maximum of 100 feet for "Twin Lead" cable.

For a semi-permanent firing facility, "C" cable can be buried in a trench up to the immediate vicinity of the shot table and "Twin Lead" cable used for the disposable portion of the firing circuit.

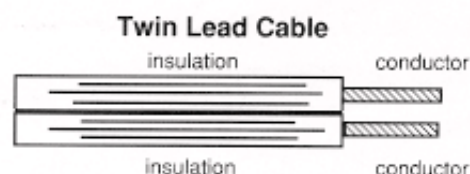
EBW Failure Rates

EBW detonators, manufactured by RISI, have failure rates approaching 1 in 1,000. When detonator failures occur in the field, they can generally be traced directly to a cable problem. Our strong recommendation is to replace firing cables or closely inspect them after every shot for damage to the insulation.

Coaxial Cable



Twin Lead Cable



RISI FIRING CABLES: Table of Characteristics

	<i>Coaxial</i>	<i>Twin Lead</i>
Name	"C" Cable	"Twin Lead"
Part Number	167-2669	167-8559
Test Voltage	21 KVDC	6 KVDC
Center conductor	19 #29 AWG	#20 AWG
Braid	16 #36 AWG	NA
Capacitance	48 pf/ft	17 pf/ft
Resistance (Loop)	.0083 ohms/ft	.020 ohms/ft
Inductance	061 μ /ft	.175 μ /ft
Insulation Material	Polyethylene	Polyethylene
Spool Length	250 ft	1000 ft
Cost per Foot	0.42 (approx.)	0.08 (approx.)
Cost per Spool	\$105.00 (approx.)	\$80.00 (approx.)

Please go to page 2



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ISSUE: 10-91 Page 2 of 2
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RISI Technical Topics

Technical Topics was created to discuss the application and handling of our products in a format that is easily understood by all our customers. This, our first issue, deals with the cable used to connect the fireset to an EBW device. This topic was brought to mind from listening to our customers in the field, observing various field installations and through RISI's 20 plus years of manufacturing and testing EBW detonators.

Future Topics

Our plan is to have six or seven issues each year. Following are a few of the topics under consideration:

- Why RISI detonators are so reliable Neutron Radiography
- Sealing detonators for underwater use
- Coaxial detonators
- Detonators with extended leads
- RISI seminars and in-plant training
- Pellets
- EBW squibs
- Canned vs uncanned detonators
- Temperature ratings of detonators
- Shaped Charge detonator switches

You Can Participate

If you like Technical Topics, tell us. If you don't like it, tell us. If you have a topic you would like published, let us know and we will consider it. If you have questions, please phone, FAX or write us for a prompt reply. If there are enough questions we may dedicate an issue to questions and answers.

Mailing List

We maintain an extensive mailing list for our exclusive use. If you are not on our list and would like to be, please let us know.

For Technical Contract and
Ordering Information, Contact:

We accept Visa, MasterCard
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