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# ELE-3COP-251

## Title - Primary Wire and Cable Preparation (End Strip).

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Before starting work please read this document carefully and note the guidance given.

### 1 Purpose and Scope

This COP describes the procedure to be used when end stripping Primary wire. The instructions in this document take preference over IPC/WHMA requirements, as do the drawing and any customer documentation.

### 2 Performance Objective

This code of practice is produced to support operators already trained in the installation of heat shrinkable and harnessing products. It identifies the procedure to be used when preparing Primary wire (End strip).

### 3 Materials and Equipment:

Always use the "shear type" (scissor action) cutters as these tend not to damage or crush the conductors. TE prefers the mechanical die type blades for precision stripping. These blades along with the wedge shape cutter blades leads towards nick free strips.

The Ideal Custom Stripmaster is the recommended tool for manual wire stripping.

See table in Section 5 Procedure for correct blade selection.

### 4 Health and Safety

Adhere to local Codes and Regulations relating to Safe Working practices. For the U.K. adhere to requirements of the Health and Safety at Work Act 1974 and subsequent amendments.

A knife should never be used for wire stripping as this can easily cause personal injury and conductor damage.

### 5 Procedure - Cutting

The manner in which the wire is cut may affect subsequent stripping operations. Diagonal cutters (where the blades contact each other) are commonly used for wire cutting and tend to "bite" the wire in half. This action distorts the conductor and flattens the ends of the strands which increases strip force and the tendency for the strands to splay during stripping. These products should not be used for stripping the insulation as they could damage the conductor.

A superior tool is a shear-type cutter, in which the blades pass by each other. This action causes very little distortion of the conductor. Examples of this are the Ideal Industries No. 45-163 and the Miller No. 100.

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#### Stripping

Many types of strippers are available today. Raychem prefers mechanical die-blades for precision stripping. They are designed specifically for the insulation material and construction of each wire. These blades combine a wedge shaped cutter blade sized to the conductor and a counterbore sized to the insulation to precisely centre the wire for clean, nick free strips.

#### Manual stripping

There is one mechanical, hand operated stripper currently available with precision die type blades, the Ideal Custom Stripmaster. The proper tool can be selected from the table below on the basis of wire part number. Other blade sets are manufactured for wires conforming to American Mil Specs, 22759, 81044 and 81381. These sets can be used on some wire sizes and constructions of Spec 44 and Spec 55 wire. Knife type blades should never be used as they can easily cause conductor damage.

#### Automated processing

Raychem wire is easily handled by automated processing units such as Komax, Artos and Eubanks when they are equipped with die type blades. Consult the relevant manufacturer about ordering blades. Their smooth, tough outer surfaces and formability make Spec 44 and Spec 55 wire ideal for automatic processing.

#### Rotary Stripping

Rotary mechanical strippers have a knife type blade that rotates round a wire held in place by a carefully sized collet. Although this tool can potentially damage conductors, users report continued success with it when stripping both Spec 44 and spec 55. The critical factors are collet selection and blade adjustment. For thin wall insulations rotary strippers with dual blades tend to work better than those with a single blade.

#### Thermal stripping

Thermal strippers operate on the concept that a dull blade will not nick conductors and that heating will enable it to cut through insulation. On most insulations a blade which is too hot will char the insulation. If thermal strippers are to be used with Spec 44 or Spec 55, a control for the blade temperature is necessary to prevent charring and discolouration of the insulation. Blade temperatures should be the lowest required to penetrate the insulation. In no case should the blades be so hot that they are visibly red.

Caution - When thermally stripping any type of wire insulation, avoid inhalation of smoke or fumes caused by excessively high temperatures. In keeping with good industrial hygiene practice, maintain adequate ventilation whenever polymeric materials are heated to degradation.

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### Jacket stripping

Many tools have been developed for cable jacket stripping. In general, the tool cuts or notches the jacket to a specific depth, the cable is then flexed to spread the notch through the jacket wall. The most versatile tool on the market for thin walled jackets is offered by Ideal in four models to accommodate a range of cables sizes.

Ideal Cable Stripper models, 45-162, 45-163, 45-164 and 45-165 cover diameters up to 3.2mm, 3.2 to 5.5mm, 4.8 to 7.9mm and 6.4 to 14.3mm respectively. These tools are described as Coaxial Cable Strippers but also work well on multiconductor cables.

### Ideal Custom Stripmaster Blades

Wire Type	AWG/mm <sup>2</sup>	Blade Set P/N	Handle Colour	Recommended Frame Part No.
<b>Spec 55</b>				
55A011X, 55D011X, M22759/ 32/33/44/45/46	26-30	L-5561	Black	L-5617 or LB-1809
	16-26	45-1987-1	Black	L-5617 or LB-1809
	10-14	45-1611-1	Red	L-5616 or LB-1808
55A021X, 55D021X, 55A081X, M22759/ 34/35/41/42/43	26-30	L-5561	Black	L-5617 or LB-1809
	16-26	45-1987-1	Black	L-5617 or LB-1809
	10-14	45-1611-1	Red	L-5616 or LB-1808
55/9960	26-30	45-2746-1	Black	L-5617 or LB-1809
	16-26	45-2745-1	Black	L-5617 or LB-1809
	12-14	45-2744-1	Red	L-5616 or LB-1808
55PC021X 55PC011X	16-26	45-1987-1	Black	L-5617 or LB-1809
	10-14	45-1611-1	Red	L-5616 or LB-1808
<b>Spec 44</b>				
44A011X, M81044/12/13	26-30	L-5561	Black	L-5617 or LB-1809
	16-26	45-1987-1	Black	L-5617 or LB-1809
	10-14	45-1611-1	Red	L-5616 or LB-1808
44A021X	26-30	L-5561	Black	L-5617 or LB-1809
	16-26	L-5560	Black	L-5617 or LB-1809
	10-14	L-5559	Red	L-5616 or LB-1808
44A03XX, 44A06XX, 44A07XX, M81044/6/7	16-26	L-5211	Black	L-5617 or LB-1809
	10-14	L-5210	Red	L-5616 or LB-1808
44A0811, M81044/9/10	16-26	L5563	Black	L-5617 or LB-1809
	10-14	L5562	Red	L-5616 or LB-1808
44M9976	16-26	45-1927-1	Black	L-5617 or LB-1809
	12-14	45-1928-1	Red	L-5616 or LB-1808

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<b>Spec 99</b>				
99M0111	16-26	45-1927-1	Black	L-5617 or LB-1809
	12-14	45-1928-1	Red	L-5616 or LB-1808
99T0111	16-26	45-2771-1	Black	L-5617 or LB-1809
	12-14	45-2770-1	Red	L-5616 or LB-1808
<b>Spec 100</b>				
100C0111	2.5 to 0.5	45-2743-1	Black	L-5617 or LB-1809
100F0111	12-20	45-2769-1	Black	L-5617 or LB-1809*
100G0111	2.5-1.0	45-2767-1	Black	L-5617 or LB-1809
	1.5- 0.6	45-2768-1	Black	L-5617 or LB-1809
<b>Flexlite</b>				
FLDWX9311	26-30	L-5561	Black	L-5617 or LB-1809
	16-26	15-1987-1	Black	L-5617 or LB-1809
	10-14	45-1611-1	Red	L-5616 or LB-1808
FLHTX031X	16-26	45-1987-1	Black	L-5617 or LB-1809
	10-14	45-1611-1	Red	L-5616 or LB-1808
FLTWX031X	16-26	45-1987-1	Black	L-5617 or LB-1809
	10-14	45-1611-1	Red	L-5616 or LB-1808
<b>C-Lite</b>				
CL105-0111	0.5-2.5	45-2743-1	Black	L-5617 or LB-1809

Ideal Custom Stripmaster Frame



Ideal Custom Stripmaster Blades



### 6 Inspection Requirements

Ensure strands are not scraped, nicked severed or otherwise damaged.  
 Strands are not flattened, untwisted, buckled, kinked or otherwise deformed.  
 Ensure that there is no bird-caging

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### 7 Visual Standards



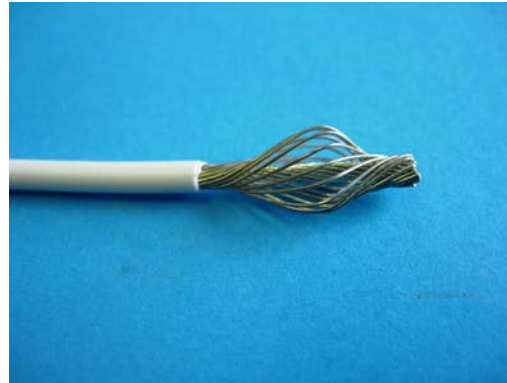
ACCEPTABLE



NOT ACCEPTABLE  
Damaged and Nicked Conductors



NOT ACCEPTABLE  
Insulation not cut cleanly



NOT ACCEPTABLE  
Conductors Bird-caged

Rev No	CR No	Date	Raised	Approved
3	CR06-DM-071	03/04/06	John Cronin	Ken Wallington
4	CR09-DM-018	23/12/08	Paul Newman	Neil Dorricott
5	Visual Identity	06/06/11	Paul Newman	Neil Dorricott

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