



Class I

INSTALLATION PROCEDURES FOR COATED RAYATEN MOULDED PARTS ONTO D-SUBMINIATURE CONNECTORS

ELE-3COP-508

TE Connectivity's Rayaten Coated Moulded Parts onto D-Subminiature Connectors

ELECTRONIC APPROVAL, NO SIGNATURES WILL APPEAR.

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

1. PURPOSE AND SCOPE

This Code of Practice describes the procedure to be used when installing the following coated Rayaten Moulded Parts from TE Connectivity (TE):

214A011 to 052-XXC/200-0

234A011 to 052-XXC/200-0

234A111 to 152-XXC/200-0

The instructions stated in this document take preference over IPC/WHMA requirements, as do the drawing and any customer documentation.

It is good working practice that where trained operators have not installed this product for over 6 months, a sample installation should be carried out by the operator to refresh installation practice. Performance of the sample can be checked using the inspection standards described within this document.

TABLE OF CONTENTS

1.	PURPOSE AND SCOPE	2
2.	PERFORMANCE OBJECTIVE.....	4
3.	MATERIALS AND EQUIPMENT	5
4.	HEALTH AND SAFETY	6
5.	PROCEDURE - PREPARATION.....	7
6.	INSPECTION REQUIREMENTS	12
7.	REVISION HISTORY	13

Table of Figures

Figure 1	Degreasing cable jacket	9
Figure 2	Moulded part lip clipped over connector	10
Figure 3	Heat 'H' end of moulded part	10
Figure 4	Apply heat towards 'J' end with 'H' end clamped	10

Table of Tables

Table 1	Cable jacket cutback distance 'A'.....	8
Table 3	Revision history	13

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 procedures to be used when installing the above listed Rayaten Moulded Parts onto a D-Subminiature connector using a hot air gun. It also details the preparation of the cable jacket and Rayaten coated moulded part.

3. MATERIALS AND EQUIPMENT

Appropriate Coated Rayaten Moulded Part.

P100 grit Emery Cloth or equivalent.

Degreasing Agent isopropyl alcohol or isopropanol (IPA) impregnated tissue wipe.

Heavy duty tissues.

Heat Gun CV1981 or equivalent. Other hot air guns may be used but these must be capable of delivering the temperatures required for installation of the moulded part. This also includes hot air guns with temperature displays.

Reflector PR-51 or equivalent.

Appropriate Bulldog clips.

Heat Resistant Gloves.

Safety Glasses.

4. HEALTH AND SAFETY

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

The installation should be carried out in a well-ventilated area.

Always wear heat resistant safety gloves when handling hot plastics and adhesives.

The use of suitable protective gloves and barrier cream is recommended when using solvents. Avoid prolonged repeated skin contact with solvents and always wash hands after using solvents.

Care should be taken to wear safety glasses when using and handling chemical solvents. If eyes do become contaminated, flush with water and obtain medical assistance immediately.

Always ensure all equipment is calibrated before use.

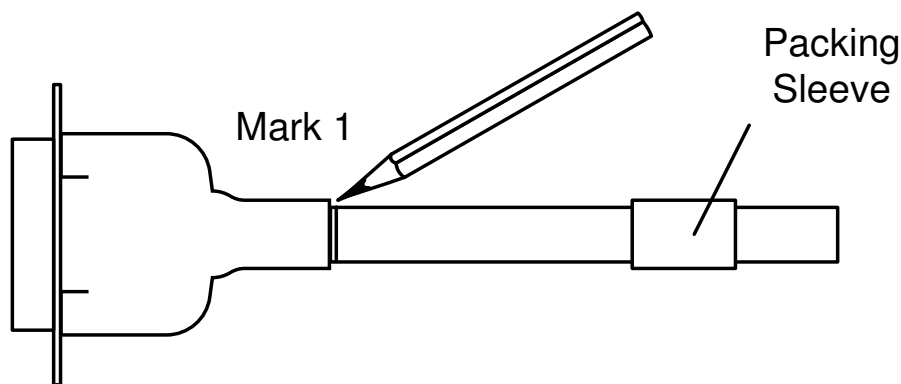
5. PROCEDURE - PREPARATION

Slide the appropriate coated Rayaten moulded part and a heat shrinkable packing sleeve of suitable material 15 mm long onto the cable. Do not abrade or degrease the inner of the moulded part.

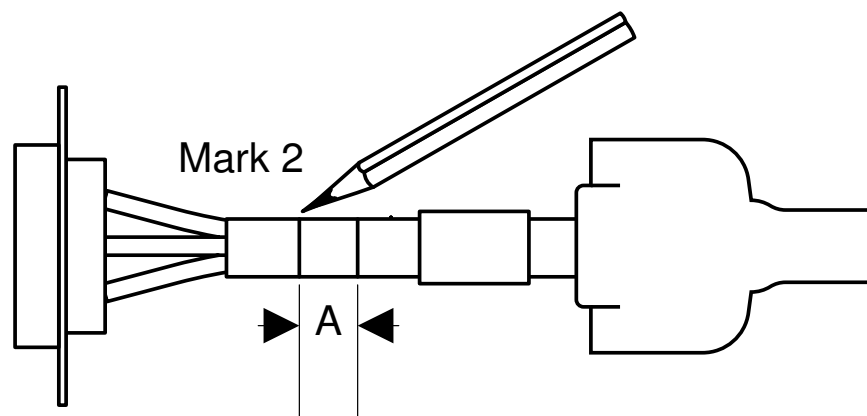
Cut back the cable jacket and braid sufficiently to terminate the conductors to the connector. The recommended dimensions depend upon the size of the moulded part. Allow an extra 20 mm for service loops if required.

Terminate the conductors to the connector in the appropriate way.

Slide the moulded part along the cable and temporarily secure it to the connector. Mark the cable where the moulded part ends.



Release the moulded part and slide it back along the cable. Make a second mark, distance 'A' towards the connector from Mark 1. Distance 'A' depends on the size of the moulded part and is given in Table 1 (dimension A). Cut back the cable jacket to this mark.

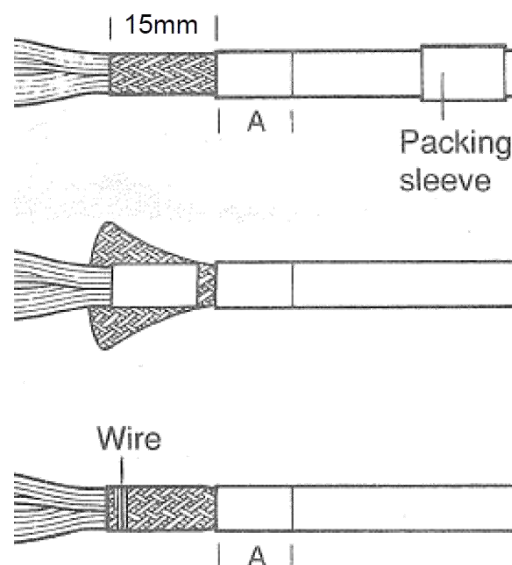


Moulded Part Number	Dimension A (mm)
214A011	5
214A021	7
214A032	8
214A042	10
214A052	11
234A011	6
234A021	7
234A032	8
234A042	11
234A052	11
234A111	4
234A132	6
234A142	8
234A153	11

Table 1 Cable jacket cutback distance 'A'

Cut back the cable braid leaving 15 mm exposed from the end of the cable jacket.

Position the heat-shrinkable packing sleeve under the 15 mm of exposed braid and recover down. Secure the ends of the braid with the tinned copper wire, ensuring that the twisted ends are folded flat against the braid. The braid and cable are now of similar diameter.



To ensure the best possible bond between the moulded part and the cable jacket, degrease the cable jacket and the braid in the area where the moulded part will recover onto the cable using Isopropyl alcohol for approximately 30 mm.

Degrease the connector in the area where the moulded part will recover using Isopropyl alcohol for approximately. Do not abrade the connector as this will damage the connector plating.

Abrade the cable jacket thoroughly in the same area with P100 grit emery cloth. The whole surface of the cable jacket should be abraded removing any print on the cable jacket. See Figure 1.

Remove loose particles from the abraded area using a dry tissue. **DO NOT** use a solvent wipe.

Ensure sufficient cable jacket has been abraded to incorporate the strip length requirement.

Take care to avoid abrading the plating of the braid.



Figure 1 Degreasing cable jacket

This part of the cable preparation is very important in ensuring a strong bond to the moulded part.

In order to verify correct installation it is important that certain checks are carried out to ensure that there are no high resistance terminations. This can be done by recording the DC resistance of the length of the braid of the cable. Upon completion of installation of the Rayaten Moulded Part, the DC resistance value should not increase by greater than 2.5 milliohms.

Example

Where initial DC resistance value of cable braid = 8 milliohms, after moulded part installation maximum reading from the end of cable braid to connector shell should be $8 + 2.5 = 10.5$ milliohms. The measurement of DC resistance gives no statement about the screening performance of the harness, it only tells the quality of the termination.

Position the Rayaten moulded part onto the connector end. Clip the lips over the connector end as shown in Figure 2; apply a little heat if necessary to ensure correct positioning of the moulded part onto the connector.

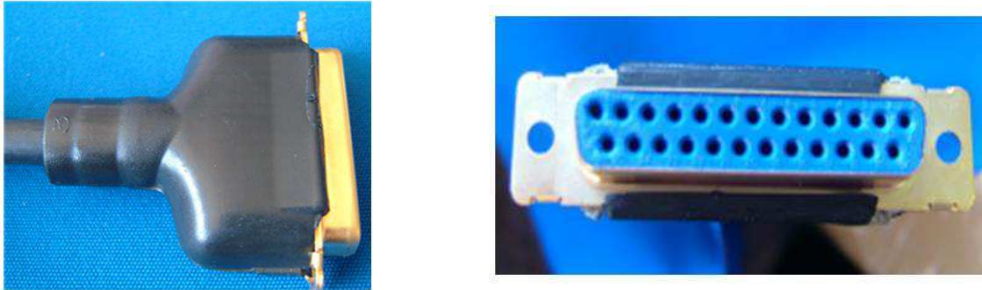


Figure 2 Moulded part lip clipped over connector

Start to heat the part using CV1981 with a PR-51 reflector, the gun should be set at 230°C to 250°C. Gently recover around the moulded part, angling the heat gun away from the cable end (see Figure 3).

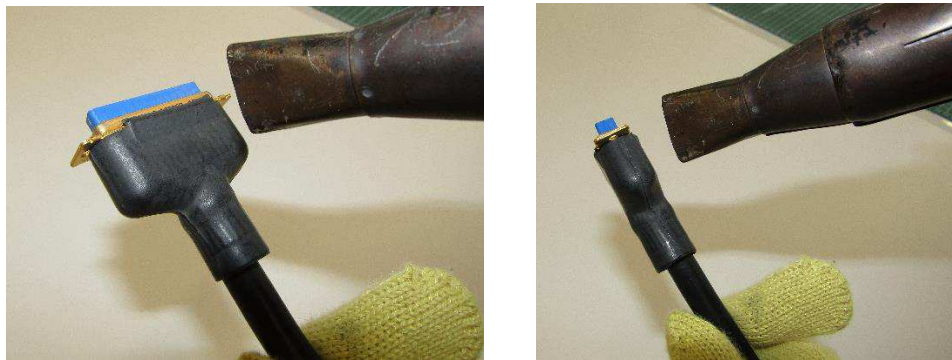


Figure 3 Heat 'H' end of moulded part

Once the H end of the moulded part is recovered, place a suitable bulldog clip into position on the H end and apply heat for 30 seconds around the clamped area to ensure the adhesive softens and flows. Move the heat gently up the part and start to recover the cable end onto the cable (see Figure 4).



Figure 4 Apply heat towards 'J' end with 'H' end clamped

Ensure that when recovering the moulded part on the cable end that the cable jacket aligns with the uncoated section of the moulded part.

Continue heating along the moulded part recovering the J end onto the cable. Heat must be applied evenly around the moulded part at the J end to enable the part to recover evenly and prevent scorching.

Ensure the part is fully recovered onto the cable. After the part has been fully recovered onto the cable, apply 120 seconds of post heat evenly around the moulded part at the cable end to ensure the adhesive flows and achieves maximum bonding performance. Take care not to scorch the moulded part. The flow of adhesive should be evident around the cable end.

Once the installed part has cooled, release the clamps and gently remove the assembly.

Allow to stand for 24 hours before any aggressive handling

Always ensure that the air vent on the rear of the hot air gun is open and that it is dust free.

Always allow the hot air gun to stabilise at the required temperature and setting for two minutes before commencing calibration and installation.

Hot air gun validation shall be carried out on a regular basis, frequency will depend on usage. Please refer to the Manufacturers guide for hot air gun calibration and maintenance and ELE-3COP-711 for hot air gun validation.

6. INSPECTION REQUIREMENTS

There should be no separation between the Rayaten Moulded Part and the connector at the adhesive bond line.

There should be no separation between the Rayaten Moulded Part and the cable jacket at the adhesive bond line.

The Rayaten Moulded Part must be free from fingerprints, excess adhesive and scorch marks.

Record DC resistance measurements.

7. REVISION HISTORY

Author	Approved	Date	Rev	Comments
K. Carter	P. White	03JUN1991	2	-
P. Newman	N. Dorricott	16FEB2009	3	DMTEC
P. VU	H. Smith	27MAR2018	4	Plated Rayaten replaced by Coated Rayaten moulded parts RTS-1364475.1

Table 2 Revision history

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