DIN EN 16602-70-18:2015-02 (E)

Space product assurance - Preparation, assembly and mounting of RF coaxial cables; English version EN 16602-70-18:2014

Table of contents

Foreword 5

Introduction 6

1 Scope 7

2 Normative references 8

3 Terms, definitions and abbreviated terms 9

3.1 Terms from other standards 9

3.2 Terms specific to the present standard 9

3.3 Abbreviated terms 9

4 Principles and prerequisites of reliable soldered or crimped cable connections 10

4.1 Principles of reliable soldered or crimped semi-rigid cable connections 10

4.2 Prerequisites for assembly and mounting of semi-rigid coaxial cables 10

4.3 Alternative coaxial cable technologies 11

5 Requirements 12

5.1 Preparatory conditions 12

5.1.1 Facility cleanliness 12

5.1.2 Environmental conditions 12

5.1.3 Lighting requirements 13

5.1.4 Equipment and tools 13

5.2 Material selection 15

5.2.1 Solder 15

5.2.2 Flux 16

5.2.3 Solvents 16

5.2.4 Cable selection 17

5.2.5 Connector selection 17

5.3 Preparation of semi-rigid cable 18

5.3.1 General 18

5.3.2 Inspection of cable 18

5.3.3 Cutting cable to initial oversize length 18

5.3.4 Cable forming and minimum bend radius 18
5.3.5 Preconditioning heat treatment 19
5.3.6 Trimming cable to final length 20
5.3.7 Stripping the cable ends 21
5.3.8 Inspection of stripped cable ends 21
5.4 Preparation for soldering assembly of semi-rigid cables 22
5.4.1 General 22
5.4.2 Degolding and pretinning 22
5.4.3 Solder preforms 23
5.5 Assembly of connectors to RF coaxial cables 24
5.5.1 Solder assembly of semi-rigid cables 24
5.5.2 Crimp assembly of semi-rigid cables and other assembly techniques 28
5.5.3 Completed assemblies 28
5.6 Mounting of cables 29
5.6.1 Semi-rigid cables with straight solder-type connectors 29
5.6.2 Semi-rigid cables with right-angle connectors 30
5.6.3 Other cable mounting technologies 30
5.7 Process verification 31
5.7.1 General 31
5.7.2 Temperature cycling 31
5.7.3 Vibration 31
5.8 Quality assurance 31
5.8.1 Data 31
5.8.2 Nonconformance 32
5.8.3 Calibration 32
5.8.4 Traceability 32
5.8.5 Workmanship standards 32
5.8.6 Inspection 32
5.8.7 Operator and inspector training and certification 33
Annex A (normative) **Logbook – DRD 34**
A.1 DRD identification 34
A.1.1 Requirement identification and source document 34
A.1.2 Purpose and objective 34
A.2 Expected response 34
A.2.1 Scope and content 34
A.2.2 Special remarks 34
Annex B (normative) **Workmanship standards 35**

B.1 Overview 35
B.2 Illustrations 35

Annex C (informative) **Graphical information 37**
C.1 Overview 37
C.2 Typical cable cut-off fixture 37
C.3 Typical cable-forming tool 38
C.4 Approved and non-approved straight solder-type cable-end connectors 39
C.5 Method of producing solder performs 40
C.6 Centre contact assembly 40

Bibliography 41

Figures

Figure B-1 : Photograph showing non-captive nut and preferred solder fillet 35
Figure B-2 : Microsection through preferred solder fillet, revealing full penetration of solder path 35
Figure B-3 : Unacceptable solder fillet dimensions 36
Figure C-1 : Typical cable cut-off fixture 37
Figure C-2 : Typical cable-forming tool 38
Figure C-3 : Approved and non-approved straight solder-type cable-end connectors 39
Figure C-4 : Method of producing solder preforms 40
Figure C-5 : Centre contact assembly 40

Tables

Table 5-1: Design rules for minimum bend radius 19
Table 5-2: Preconditioning heat treatment process 20