# DIN 6701-4:2015-12 (E)

## Adhesive bonding of railway vehicles and parts - Part 4: Manufacturing controls and quality assurance

## Contents

Page


Foreword ..... 4

Introduction ..... 5

1 Scope ..... 6

2 Normative references ..... 6

3 Terms and definitions ..... 7

4 Workmanship ..... 7
4.1 General ..... 7
4.2 General process requirements ..... 8
4.2.1 Transport and storage of adhesives, auxiliary materials and adherends ..... 8
4.2.2 Manufacturing environment ..... 8
4.2.3 Preparation of work stations and conditioning ..... 8
4.2.4 Occupational health and safety, environmental protection ..... 9
4.2.5 Checking for fitting accuracy ..... 9
4.2.6 Checks prior to start of production ..... 9
4.2.7 Treatment of bonding surfaces ..... 9
4.2.8 Batching, blending, application ..... 11
4.2.9 Joining the adherends ..... 11
4.2.10 Clamping ..... 11
4.2.11 Curing ..... 12
4.2.12 Packaging and transport of bonded components ..... 12
4.2.13 Disassembly of bonds ..... 12
4.3 Specific processing requirements ..... 12
4.3.1 Adhesives ..... 12
4.3.2 Adherend materials and surfaces ..... 14
4.4 Work instructions ..... 17
4.5 Manufacturing documentation ..... 18

5 Mock-ups prepared for new production to demonstrate consistency ..... 19

6 Adhesive bonding as repair and touching-up work on rail vehicles ..... 20
6.1 General ..... 20
6.2 Workmanship ..... 20
6.3 Maintenance programme ..... 20
6.4 Repair instructions ..... 20
6.5 Subcontracting ..... 21

7 Quality assurance ..... 21
7.1 General ..... 21
7.2 Quality planning ..... 21
7.2.1 General ..... 21
7.2.2 Testing plan ..... 21
7.2.3 Test instructions ..... 22
7.2.4 Test report ..... 22
7.3 Quality inspection ..... 22
7.3.1 General ..... 22
7.3.2 Test methods ..... 22

7.3.3 Verifying production consistency ..... 23
7.4 Corrective action ..... 23
7.5 Imperfections in adhesive bonds ..... 23
7.5.1 Application-related imperfections ..... 23
7.5.2 Decorative imperfections ..... 23

Annex A (informative) Non-destructive testing ..... 24

A.1 General ..... 24
A.2 Dye penetrant testing ..... 24
A.3 Test for adhesion at flanks ..... 24
A.4 Suction cup test ..... 24
A.5 Test using a feeler gauge ..... 24

Annex B (informative) Examples of imperfections of bonds ..... 25

Annex C (informative) Examples of decorative imperfections ..... 26

Bibliography ..... 27