

This text is intended for men and women to an equal extent. However, for better readability, it was decided not to use the consistent formulation in the male/female form in the text and only the male form is specified.

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1 General

The training to become a plastics adhesive bonder for pipe joints between PVC-U, PVC-C and ABS with solvent-based adhesives is ongoing vocational training. The successful participation in the course may conclude with the adhesive bonder qualification test according to the DVS 2221 guideline.

2 Educational facilities

The course to become a plastics adhesive bonder for pipe joints between PVC-U, PVC-C and ABS with solvent-based adhesives is only staged by DVS educational facilities with corresponding authorisation for this purpose.

3 Prerequisites

The following prerequisites apply to the participation in the course to become a plastics adhesive bonder for pipe joints between PVC-U, PVC-C and ABS with solvent-based adhesives:

3.1.a Proof of fundamental knowledge in the field of plastics processing.

or

3.1.b Participation in a foundation course about the processing of semi-finished products made of thermoplastics.

3.2 Proficiency in the course language to such an extent that the teaching can be followed and the theoretical qualification test can be taken.

The prerequisites for the admission to the qualification test are governed by the DVS® 2221 guideline.

4 Course structure, duration and programme

The course has a total duration of 13.5 teaching units (TU) plus a qualification test (optional) lasting approx. 120 minutes with the following structure:

Part 1: Specialist theory: 8.5 TUs

Part 2: Specialist practice: 5.0 TUs

Part 3: Qualification test: 120 minutes

5 Participation and qualification test certificates

The qualification test is described in the DVS® 2221 guideline. After taking part in the course, the participant receives a participation certificate. After passing the qualification test, the participant receives a qualification test certificate according to the DVS® 2221 guideline.

¹⁾ One TU corresponds to a period of 5 minutes

This publication was drawn up by a group of experienced experts in cooperative work on an honorary basis and was approved by the "Training and Qualification Testing" working group. It is binding for DVS educational facilities. The user must always check whether the version in his possession is still valid.

DVS, Technical Committee Working Group "Joining of Plastics"
 DVS, Education Committee, Working Group: "Training and Qualification Testing"

Part 1: Specialist theory

Chapter	Subject matter for specialist theory	TUs
1	Economic significance and application of the plastics <ul style="list-style-type: none"> • economic significance • areas of application • properties 	0.5
2	Structures and types of the plastics <ul style="list-style-type: none"> • manufacture of the plastics (from the petroleum to the plastic) • monomers, polymers and polymer chains • structures of the plastics • thermoplastics, thermoset plastics and elastomers 	1
3	Materials science for thermoplastics <ul style="list-style-type: none"> • fundamentals • areas of application • properties • behaviour in the event of a change in the temperature • PVC-U, PVC-C and ABS 	1.5
4	Pipes and piping parts made of PVC-U, PVC-C and ABS <ul style="list-style-type: none"> • manufacture of the pipes • transport and storage • temperature-induced change in the length • pipe marking • piping parts 	1
5	General fundamentals of adhesive bonding technology <ul style="list-style-type: none"> • fundamentals of adhesive bonding • cohesion and adhesion • wettability of surfaces 	1
6	Classification of the adhesives <ul style="list-style-type: none"> • chemically reacting adhesives • physically setting adhesives • diffusion adhesive-bonded joint 	1
7	Adhesive bonding of PVC-U, PVC-C and ABS pipes and piping parts <ul style="list-style-type: none"> • weak solvent-based adhesives (PC adhesive) • strong solvent-based adhesives (THF adhesive) • temperature-resistant adhesives • adhesive bonding techniques • repair techniques • storage of the adhesives • testing and inspection of adhesive-bonded joints 	1.5

8	Environmental protection and occupational health and safety <p>8.1 Health hazards</p> <ul style="list-style-type: none"> • way in which the solvents and the adhesives act on the skin, the eyes and the lungs • permissible limiting values in the air and at the workplace (OEL and TRC values) <p>8.2 Fire and explosion hazards</p> <ul style="list-style-type: none"> • hazard-threatening quantities at the workplace and in the store • ignition sources <p>8.3 Environmental hazards</p> <ul style="list-style-type: none"> • air, water and soil <p>8.4 Technical protective measures</p> <ul style="list-style-type: none"> • work procedures, ventilation measures, first-aid measures and disposal of the waste <p>8.5 Personal protective measures</p> <ul style="list-style-type: none"> • order and cleanliness at the working position • personal hygiene (eating, drinking and smoking) • respiratory, eye and skin protection <p>8.6 Organisational protective measures</p> <ul style="list-style-type: none"> • occupational medicine care • operating instructions according to Section 20 of the Hazardous Substances Ordinance • packaging marking • workplace investigation <p>8.7 Sets of rules and safety regulations to be complied with</p>	1
Total for specialist theory		8.5

Part 2: Specialist practice

Chapter	Subject matter for specialist practice	TUs
1	Manufacture of adhesive-bonded joints between pipes and fittings <ul style="list-style-type: none"> • preparation of the adhesive-bonded joint (cutting to length, bevelling and deburring) • handling of tools and auxiliary materials (brush choice, adhesive application and auxiliary jig) • adhesive bonding exercise on PVC-U, PVC-C or ABS • repair techniques • utilisation of THF adhesives and PC adhesives 	5
Total for specialist practice		5

Part 3: Qualification test

Chapter	Qualification test according to DVS® 2221	Minutes
1	Manufacture of Test Piece SG 1, Table 1	30
	Manufacture of Test Piece SG 2, Table 1	30
	Manufacture of Test Piece SG 3, Table 1	30
2	Theoretical qualification test	30
Total for qualification test according to DVS® 2221		120