

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

ASTM - ISO Standards Comparative Guide



THE **ADHESIVE** AND **SEALANT** COUNCIL, INC.

The Adhesive and Sealant Council, Inc.
7979 Old Georgetown Road, Suite 500
Bethesda, MD 20814
301-986-9700

Copyright 2006 by The Adhesive and Sealant Council, Inc.
All rights reserved

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

Purpose:

The intention of this study is to provide a general comparative reference of adhesive testing standards between ASTM International standards and related ISO (International Standards Organization) standards.

The Adhesive and Sealant Council commissioned Chemsultants International Inc. to develop this initial repository of knowledge, deemed to be useful in identifying key similarities and differences between the comparable adhesive testing methods of the two international standards bodies.

Due to time and budget considerations this study is limited to an overall focus specific to general adhesive testing methods and does not purport to address adhesive testing methodologies that may be inherent in the overall standards of/for specific industries or applications such as Building Materials, Furniture, Footwear, or others.

Scope:

ISO

This study focused on ICS field 83 (Rubber and Plastics), Section 83.180 (Adhesives) within the overall ISO structure. The complete list of ISO standards considered within this area is as follows:

ISO 4578:1997	Adhesives – Determination of peel resistance of high – strength adhesive bonds - Floating roller method.
ISO 4587:2003	Adhesives – Determination of tensile lap shear strength of rigid-to-rigid bonded assemblies.
ISO 6237:2003	Adhesives – Wood-to-wood adhesive bonds – Determination of shear strength by tensile loading.
ISO 6238:2001	Adhesives – Wood-to-wood adhesive bonds – Determination of shear strength by compressive loading.
ISO 6922:1987	Adhesives – Determination of tensile strength of butt joints
ISO 7387-1:1983	Adhesives with solvents for assembly of PVC – U pipe elements – Characterization – Part 1: Basic test methods.
ISO 8510-1:1990	Adhesives – Peel test for a flexible-bonded-to-rigid test specimen assembly – Part 1: 90 degree peel.
ISO 8510-1:1990	Adhesives – Peel test for a flexible-bonded-to-rigid test specimen assembly – Part 2: 180 degree peel.
ISO 9142:2003	Adhesives – Guide to the selection of standard laboratory aging conditions for testing bonded joints.
ISO 9311-1:2005	Adhesives for thermoplastic piping systems – Part 1: Determination of film properties.
ISO 9311-2:2002	Adhesives for thermoplastic piping systems – Part 2: Determination of shear strength.
ISO 9311-3:2005	Adhesives for thermoplastic piping systems – Part 3: Test method for the determination of resistance to internal pressure.
ISO 9653:1998	Adhesives – Test method for shear impact strength of adhesive bonds.

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

ISO 9664:1993	Adhesives – Test method for fatigue properties of structural adhesives in tensile shear.
ISO 9665:1998	Adhesives – Animal glues – Methods of sampling and testing.
ISO 10123:1990	Adhesives – Determination of shear strength of anaerobic adhesives using pin-and-collar specimens.
ISO 10354:1992	Adhesives – Characterization of durability of structural-adhesive-bonded assemblies – Wedge rupture test.
ISO 10363:1992	Adhesives – Hot melt adhesives – Determination of thermal stability.
ISO 10364:1993	Adhesives – Determination of working life (pot life) of multi-component adhesives.
ISO 10365:1992	Adhesives – Designation of main failure patterns.
ISO 10964:1993	Adhesives – Determination of torque strength of anaerobic adhesives on threaded fasteners.
ISO 11003-1:2001	Adhesives – Determination of shear behaviour of structural adhesives – Part 1: Torsion test method using butt-bonded hollow cylinders.
ISO 11003-2:2001	Adhesives – Determination of shear behaviour of structural adhesives – Part 2: Tensile test method using thick adherends.
ISO 11339:2003	Adhesives – T-peel test for flexible-to-flexible bonded assemblies.
ISO 11343:2003	Adhesives – Determination of dynamic resistance to cleavage of high-strength adhesive bonds under impact conditions – Wedge impact test.
ISO 13007:2004	Ceramic tiles – Grouts and adhesive – Part 1: terms, definitions and specifications for adhesives.
ISO 13445:2003	Adhesives – Determination of shear strength of adhesive bonds between rigid substrates by the block-shear method.
ISO 14615:1997	Adhesives – Durability of structural adhesive joint – Exposure to humidity and temperature under load.
ISO 14676:1997	Adhesives – Evaluation of the effectiveness of surface treatment techniques for aluminum – Wet-peel test by floating-roller method.
ISO 14678:2005	Adhesives – Determination of resistance to flow sagging).
ISO 14679:1997	Adhesives – Measurement of adhesion characteristics by a three-point bending method.
ISO 15107:1998	Adhesives – Determination of cleavage strength of bonded joints.
ISO 15108:1998	Adhesives – Determination of strength of bonded joints using a bending-shear method.
ISO 15109:1998	Adhesives – Determination of the time to rupture of bonded joints under static load.
ISO 15166-1:1998	Adhesives – Methods of preparing bulk specimens – Part 1: Two-part systems
ISO 15166-2:2000	Adhesives – Methods of preparing bulk specimens – Part 2: Elevated temperature curing one-part systems.
ISO 15509:2001	Adhesives – Determination of the bond strength of engineering-plastic joints.
ISO 15605:2000	Adhesives – Sampling.
ISO 15908:2002	Adhesives for thermoplastic piping systems – Test method for the determination of thermal stability of adhesives.
ISO 17212:2004	Structural adhesives – Guidelines for the surface preparation of metals and plastics prior to adhesive bonding.

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

ASTM International

The ASTM standards included in this study are those under the jurisdiction of the ASTM D14 committee, and include representation from the following subcommittees:

<u>D14.03</u>	<u>Research (not included)</u>
<u>D14.04</u>	<u>Terminology</u>
D907-05	Standard Terminology of Adhesive
WK3885	Proposed Revision of D907-03
WK7123	Proposed Revision of D907-04a
<u>D14.10</u>	<u>Working Properties</u>
D898-05	Standard Test Method for Applied Weight Per Unit Area Of Dried Adhesive Solids
D899-00	Standard Practice for Applied Weight per Unit Area of Liquid Adhesive
D1084-97	Standard Test Methods for Viscosity of Adhesives
D1144-99	Standard Practice for Determining Strength Development of Adhesive Bonds
D1146-00	Standard Test Method for Blocking Point of Potentially Adhesive Layers
D1337-04	Standard Practice for Storage Life of Adhesives by Viscosity and Bond Strength
D1338-99	Standard Practice for Working Life of Liquid or Paste Adhesives by Consistency and Bond Strength
D1489-97	Standard Test Method for Nonvolatile Content of Aqueous Adhesives
D1875-03	Standard Test Method for Density of Adhesives in Fluid Form
D2556-93a	Standard Test Method for Apparent Viscosity of Adhesives Having Shear-Rate- Dependent Flow Properties
D4338-97	Standard Test method for Flexibility Determination of Supported Adhesive Films by Mandrel Bend
D4339-01	Standard Test Method for Determination of the Odor of Adhesives
D5040-90	Standard Test Methods for Ash Content of Adhesives
D5113-97	Standard Test Methods for Determining Adhesive Attack on Rigid Cellular Foam

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

D5267-97	Standard Test Methods for Determination of Extrudability of Cartridge Adhesives
D6862-04	Standard Test Methods for 90 Degree Peel Resistance of Adhesives
D7149-05	Standard Practice for Determining the Freeze Thaw Stability of Adhesives
WK210	Test Method for 90 degree Peel Resistance of Adhesives
WK657	Practice for Measuring Storage Stability of Adhesives at Elevated Temperatures
WK2416	Standard Practice for Determining the Freeze Thaw Stability of Adhesives
WK6223	Proposed Withdrawal of D1916-93(1997)
WK7122	Proposed Revision of D898-96

D14.30

Wood Adhesives

D905-03	Standard Test Methods for Strength properties of Adhesive Bond in Shear by Compression Loading
D906-98	Standard Test Methods for Strength Properties of Adhesive in Plywood Type Construction in Shear by Tension Loading
D1101-97a	Standard Test Methods for Integrity of Adhesive Joints in Structural Wood Products for Exterior Use
D1488-00	Standard Test Method for Amylaceous Matter in Adhesives
D1490-01	Standard Test Methods for Nonvolatile Content of Urea-Formaldehyde Resin Solutions
D1579-01	Standard Test Methods for Filler Content of Phenol, Resorcinol, and Melamine Adhesives
D1582-98	Standard Test Methods for Nonvolatile Content of Liquid Phenol, Resorcinol, and Melamine Adhesives
D1583-01	Standard Test Method for Hydrogen Ion Concentration of Dry Adhesive Films
D2339-98	Standard Test Method for Strength Properties of Adhesives in Two-ply Wood Construction in Shear by Tension Loading
D2559-04	Standard Specification for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions
D3434-00	Standard Test Method for Multiple-Cycle Accelerated Aging (Automatic Boil Test) for Exterior Wet Use Wood Adhesives
D3535-00	Standard Test Method for Resistance to Deformation Under Static Loading for Structural Wood Laminating Adhesives Used under Exterior (Wet Use) Exposure Conditions
D4300-01	Standard Test Methods for Ability of Adhesive Films to Support or Resist the Growth of Fungus
D4317-98	Standard Specification for Polyvinyl Acetate-Based Emulsion Adhesives

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

D4426-01	Standard Test Method for Determination of Percent Nonvolatile Content of Liquid Phenolic Resins Used for Wood Laminating
D4680-98	Standard Test Method for Creep and Time to Failure of Adhesives in Static Shear by Compression Loading (Wood-to-Wood)
D4688-99	Standard Test Method for Evaluating Structural Adhesives for Finger Jointing Lumber
D4689-99	Standard Specification for Adhesive, Casein-Type
D4690-99	Standard Specification for Urea-Formaldehyde Resin Adhesives
D4783-01	Standard Test Methods for Resistance of Adhesive Preparations in Container to Attack by Bacteria, Yeast, and Fungi
D5266-99	Standard Practice for Estimating the Percentage of Wood Failure in Adhesive Bonded Joints
D5572-95	Standard Specification for Adhesives Used for Finger Joints in Nonstructural Lumber Products
D5751-99	Standard Specification for Adhesives Used for Laminate Joints in Nonstructural Lumber Products
D5824-98	Standard Test Method for Determining Resistance to Delamination of Adhesive Bonds in Overlay-Wood Core Laminates Exposed to Heat and Water
WK1574	Proposed Revision of D905-98
WK2509	Proposed Revision of D2559-03
WK8593	Proposed Withdrawal of D1101-97a

D14.40

Adhesives for Plastics

D904-99	Standard Practice for Exposure of Adhesive Specimens to Artificial Light
D1828-01	Standard Practice for Atmospheric Exposure of Adhesive-Bonded Joints and Structures
D2093-03	Standard Practice for Preparation of Surfaces of Plastics Prior to Adhesive Bonding
D3163-01	Standard Test Method for Determining Strength of Adhesively Bonded Rigid Plastic Lap-Shear Joints in Shear by Tension Loading
D3164-03	Standard Test Method for Strength Properties of Adhesively Bonded Plastic Lap-Shear Sandwich Joints in Shear by Tension Loading
D3164M-03	Standard Test Method for Strength Properties of Adhesively Bonded Plastic Lap-Shear Sandwich Joints in Shear by Tension Loading

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

D3807-98	Standard Test Method for Strength Properties of Adhesives in Cleavage Peel by Tension Loading (Engineering Plastics-to-Engineering Plastics)
D3808-01	Standard Test Method for Qualitative Determination of Adhesion of Adhesives to Substrates by Spot Adhesion
D3929-03	Standard Test Method for Evaluating Stress Cracking of Plastics by Adhesives Using the Bent-Beam Method
D4501-01	Standard Test Method for Shear Strength of Adhesive Bonds Between Rigid Substrates by the Block-Shear Method
D5041-98	Standard Test Method for Fracture Strength in Cleavage of Adhesives in Bonded Joints
D5573-99	Standard Practice for Classifying Failure Modes in Fiber-Reinforced-Plastic (FRP) Joints
D5868-01	Standard Test Method for Lap Shear Adhesion for Fiber Reinforced Plastic (FRP) Bonding
D6105-04	Standard Practice for Application of Electrical Discharge Surface Treatment (Activation) of Plastics for Adhesive Bonding
WK815	Proposed Revision of D3164-97
WK834	proposed revision of D3164M-98

D14.50

Hot Melts, Pressure Sensitives and Archival Adhesives

D1994-95	Standard Test Method for Determination of Acid Numbers of Hot-Melt Adhesives
D2979-01	Standard Test Method for Pressure-Sensitive Tack of Adhesives Using an Inverted Probe Machine
D3111-99e1	Standard Test Method for Flexibility Determination of Hot-Melt Adhesives by Mandrel Bend Test Method
D3121-94	Standard Test Method for Tack of Pressure-Sensitive Adhesives by Rolling Ball
D4497-94e1	Standard Test Method for Determining the Open Time of Hot Melt Adhesives (Manual Method)
D4498-00	Standard Test Method for Heat-Fail Temperature in Shear of Hot Melt Adhesives
D4499-95	Standard Test Method for Heat Stability of Hot-Melt Adhesives
D6195-03	Standard Test Methods for Loop Tack
D6463-99	Standard Test Method for Time to Failure of Pressure Sensitive Articles Under Sustained Shear Loading
WK211	Test Method for Shear Adhesion Failure Temperature (Saft) of Pressure Sensitive Adhesives
WK834	Standard Specification for Laser Printable Pressure Sensitive Adhesive Labels for File Folders and Boxes for Library and Archive Use
WK815	Standard Specification for Thermal Transfer Printable Pressure Sensitive Adhesive Labels for Standard Specification for Laser Printable Pressure Sensitive Adhesive Labels for File Folders and Boxes for Library and Archive Use

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

WK834 Proposed Revision of D3121-94(1999)
 WK834 Proposed Revision of D6463-99

D14.60

Adhesive Material Classification System

D1874-62 Standard Specification for Water- or Solvent-Soluble Liquid Adhesives for Automatic Machine Sealing of Top Flaps of Fiberboard Shipping Cases
 D2851-98 Standard Specification for Liquid Optical Adhesive
 D4800-94 Standard Guide for Classifying and Specifying Adhesives
 D5363-03 Standard Specification for Anaerobic Single-Component Adhesives (AN)
 D6465-99 Standard Guide for Selecting Aerospace and General Purpose Adhesives and Sealants

D14.70

Construction Adhesives

C557-03 Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing
 D1779-98 Standard Specification for Adhesive for Acoustical Materials
 D1995-92 Standard Test Methods for Multi-Modal Strength Testing of Autohesives (Contact Adhesives)
 D3498-03 Standard Specification for Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems
 D3632-98 Standard Test Method for Accelerated Aging of Adhesive Joints by the Oxygen-Pressure Method
 D3930-93a Standard Specification for Adhesives for Wood-Based Materials for Construction of Manufactured Homes
 D3931-93a Standard Test Method for Determining Strength of Gap-Filling Adhesive Bonds in Shear by Compression Loading
 D3983-98 Standard Test Method for Measuring Strength and Shear Modulus of Nonrigid Adhesives by the Thick-Adherend Tensile-Lap Specimen
 D4027-98 Standard Test Method for Measuring Shear Properties of Structural Adhesives by the Modified-Rail Test
 D4502-92 Standard Test Method for Heat and Moisture Resistance of Wood-Adhesive Joints
 D5215-93 Standard Test Method for Instrumental Evaluation of Staining of Vinyl Flooring by Adhesives
 D5574-94 Standard Test Methods for Establishing Allowable Mechanical Properties of Wood-Bonding Adhesives for Design of Structural Joints
 D6004-04 Standard Test Method for Determining Adhesive Shear Strength of Carpet Adhesives

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

D6005-03	Standard Test Method for Determining Slump Resistance of Carpet Adhesives
D6325-98	Test Method for Determining Open Assembly Time of Carpet Mastic Adhesives
D6464-03a	Standard Specification for Expandable Foam Adhesives for Fastening Gypsum Wallboard to Wood Framing
WK 814	Proposed Revision of C557-99
WK 830	Proposed Revision of D6464-02
WK 1059	Proposed Revision of D6004-96
WK 1575	Proposed Revision of D6005-96
WK 814	Proposed Revision of D5215-93 (2005)

D14.80

Metal Bonding Adhesives

D896-04	Standard Practice for Resistance of Adhesive Bonds to Chemical Reagents
D897-01	Standard Test Method for Tensile Properties of Adhesive Bonds
D903-98	Standard Test Method for Peel or Stripping Strength of Adhesive Bonds
D950-03	Standard Test Method for Impact Strength of Adhesive Bonds
D1002-01	Standard Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal)
D1062-02	Standard Test Method for Cleavage Strength of Metal-to-Metal Adhesive Bonds
D1151-00	Standard Practice for Effect of Moisture and Temperature on Adhesive Bonds
D1183-03	Standard Practices for Resistance of Adhesives to Cyclic Laboratory Aging Conditions
D1184-98	Standard Test Method for Flexural Strength of Adhesive Bonded Laminated Assemblies
D1304-99	Standard Test Methods for Adhesives Relative to Their Use as Electrical Insulation
D1780-05	Standard Practice for Conducting Creep Tests of Metal-to-Metal Adhesives
D1781-98	Standard Test Method for Climbing Drum Peel for Adhesives
D1876-01	Standard Test Method for Peel Resistance of Adhesives (T-Peel Test)
D1879-99	Standard Practice for Exposure of Adhesive Specimens to High-Energy Radiation
D2094-00	Standard Practice for Preparation of Bar and Rod Specimens for Adhesion Tests
D2095-96	Standard Test Method for Tensile Strength of Adhesives by Means of Bar and Rod Specimens
D2293-96	Standard Test Method for Creep Properties of Adhesives in Shear by Compression Loading (Metal-to-Metal)

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

D2294-96	Standard Test Method for Creep Properties of Adhesives in Shear by Tension Loading (Metal-to-Metal)
D2295-96	Standard Test Method for Strength Properties of Adhesives in Shear by Tension Loading at Elevated Temperatures (Metal-to-Metal)
D2557-98	Standard Test Method for Tensile-Shear Strength of Adhesives in the Subzero Temperature Range from -267.8 to -55°C (-450 to -67°F)
D2651-01	Standard Guide for Preparation of Metal Surfaces for Adhesive Bonding
D2674-72e1	Standard Methods of Analysis of Sulfochromate Etch Solution Used in Surface Preparation of Aluminum
D2739-97	Standard Test Method for Volume Resistivity of Conductive Adhesives
D2918-99	Standard Test Method for Durability Assessment of Adhesive Joints Stressed in Peel
D2919-01	Standard Test Method for Determining Durability of Adhesive Joints Stressed in Shear by Tension Loading
D3165-00	Standard Test Method for Strength Properties of Adhesives in Shear by Tension Loading of Single-Lap-Joint Laminated Assemblies
D3166-99	Standard Test Method for Fatigue Properties of Adhesives in Shear by Tension Loading (Metal/Metal)
D3167-03a	Standard Test Method for Floating Roller Peel Resistance of Adhesives
D3310-00	Standard Test Method for Determining Corrosivity of Adhesive Materials
D3433-99	Standard Test Method for Fracture Strength in Cleavage of Adhesives in Bonded Metal Joints
D3434-00	Standard Test Method for Multiple-Cycle Accelerated Aging Test (Automatic Boil Test) for Exterior Wet Use Wood Adhesives
D3482-90	Standard Test Method for Determining Electrolytic Corrosion of Copper by Adhesives
D3528-96	Standard Test Method for Strength Properties of Double Lap Shear Adhesive Joints by Tension Loading
D3658-01	Standard Test Method for Determining the Torque Strength of Ultraviolet (UV) Light-Cured Glass/Metal Adhesive Joints
D3762-03	Standard Test Method for Adhesive-Bonded Surface Durability of Aluminum (Wedge Test)
D3933-98	Standard Guide for Preparation of Aluminum Surfaces for Structural Adhesives Bonding (Phosphoric Acid Anodizing)
D4562-01	Standard Test Method for Shear Strength of Adhesives Using Pin-and-Collar Specimen
D4896-01	Standard Guide for Use of Adhesive-Bonded Single Lap-Joint Specimen Test Results
D5648-01	Standard Test Method for Torque-Tension Relationship of Adhesives Used on Threaded Fasteners (Lubricity)
D5649-01	Standard Test Method for Torque Strength of Adhesives Used on Threaded Fasteners
D5656-04	Standard Test Method for Thick-Adherend Metal Lap-Shear Joints for Determination of the Stress-Strain Behavior of Adhesives in Shear by Tension Loading
D5657-01	Standard Test Method for Fluid Tightness Ability of Adhesives Used on Threaded Fasteners
D6396-99	Standard Test Method for Testing of Pipe Thread Sealants on Pipe Tees

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

D6411/D6411M-99	Standard Specification for Silicone Rubber Room Temperature Vulcanizing Low Out gassing Materials
D6412/D6412M-99	Standard Specification for Epoxy (Flexible) Adhesive for Bonding Metallic and Nonmetallic Materials
WK 212	Test Method for Determining the Specific Work of Cohesion or Adhesion Failure of Adhesives Metals and Composites by Tension Loading
WK 213	Test Method for Determining Durability of Adhesive Joints by Sustained Tension Loading
WK 214	Test Method for Cross Peel Test for Automotive-Type Adhesives for Fiber Reinforced Plastic (FRP) Bonding
WK 215	Practice for Pendulum Impact Shear Adhesion of Structural Adhesives
WK 1047	Proposed Revision of D3167-97
WK 2271	Proposed Revision of D3167-03
WK 2272	Proposed Revision of D3167-03
WK 3149	Proposed Revision of D2739-97
WK 3150	Proposed Revision of D896-97
WK 6051	Proposed Revision of D3762-03
WK 6225	Proposed Revision of D1780-99
WK 6964	Proposed Revision of D1002-01

D14.90

Executive

D14.91

Long Range Planning

D14.99

ISO Activities

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

Methodology:

An initial review of the relevant ISO standards listed above along with the relevant ASTM International standards indicated that 22 comparative test standards existed between the two sets of standards.

Subsequently, a thorough review of each ISO standard was completed and a like review of each comparable ASTM International standard was completed. Each set of two comparable / related standards was then compared / contrasted in several areas including:

- 1] Scope
- 2] Equipment
- 3] Specimens: materials, sizes, preparation and conditioning
- 4] Number of test replicates
- 5] Test methodology and operational characteristics
- 6] Results, calculations and data reporting
- 7] Other dissimilarities as noted

It is principally the purpose of this report to provide identification of dissimilarities between the ISO and ASTM standards.

A final report was completed and follows for each of the 22 sets of comparable standards.

ASC ASTM/ISO Adhesive Test Standard Comparison Study (ASTM D-14 focus)

ISO Standard & Description	ISO Standard Summary and Specific Notes	Similar to ASTM Standard	ASTM Comparison Comments
<p data-bbox="92 293 359 326">ISO 4578 : 1997 (E)</p> <p data-bbox="92 363 564 461">Adhesives - Determination of peel resistance of high strength adhesive bonds - Floating roller method</p> <p data-bbox="92 1133 438 1159">REFERENCE DOCUMENTS</p> <hr data-bbox="92 1190 569 1193"/> <p data-bbox="92 1224 224 1435">ISO 291 ISO 4588 ISO 5893 ISO 7500 ISO 9142 ISO 13065 ISO 13895</p>	<p data-bbox="596 293 982 319"><u>Specimens:</u> 25.0 ± 0.5 mm wide</p> <p data-bbox="617 358 1024 415">rigid adherend: 200-250 mm long 1.6 ± 0.1 mm thick</p> <p data-bbox="617 448 993 505">flexible adherend: 250-300 mm long, 0.5 ± 0.02 mm thick</p> <p data-bbox="596 537 919 563"><u>Test replicates:</u> 5 minimum</p> <p data-bbox="596 596 1026 621">Specimen conditioning: per ISO 291</p> <p data-bbox="596 654 1003 711"><u>Crosshead speed:</u> 100 mm / min., ± 5 mm / min.</p> <p data-bbox="596 743 1050 841"><u>Record:</u> 115 mm of results, discard 1st 25 mm of test and last 20mm of test</p> <p data-bbox="596 873 1024 963">Determine avg. peel force & report, report min. and max. peel force in kilonewtons per metre of width</p>	<p data-bbox="1071 293 1434 326">ASTM D 3167 – 03a (2004)</p> <p data-bbox="1071 363 1520 461">Standard Test Method for Floating Roller Peel Resistance of Adhesives</p> <p data-bbox="1071 1133 1417 1159">REFERENCE DOCUMENTS</p> <hr data-bbox="1071 1190 1526 1193"/> <p data-bbox="1071 1224 1241 1338">ASTM B209 ASTM D 907 ASTM D 1781 ASTM E4</p>	<p data-bbox="1558 293 1877 319"><u>Specimens:</u> 12.7 mm wide</p> <p data-bbox="1579 358 1955 384">rigid adherend: 203.2 mm long</p> <p data-bbox="1579 417 1955 443">flexible adherend: 254 mm long</p> <p data-bbox="1558 537 1881 563"><u>Test replicates:</u> 6 minimum</p> <p data-bbox="1558 596 1837 621"><u>Specimen conditioning:</u></p> <p data-bbox="1558 654 1961 680"><u>Crosshead speed:</u> 152 mm / min.,</p> <p data-bbox="1558 743 1919 841"><u>Record:</u> 76 mm of results, discard 1st 25.4 mm of test</p> <p data-bbox="1558 873 1980 995">Determine avg. peel force & report, report min. and max. peel force in kilonewtons per metre of width or pounds-force per inch</p>