



THE FEICA ADHESIVES & SEALANTS
CLASSIFICATION MANUAL

2008

INTRODUCTION

In 1996, FEICA published the first European classification manual. The document printed in 3 languages was very well received by the Industry. It had the benefits of standardizing the adhesive classification of the products and their fields of application and therefore contributing to better interpret the market reports issued by FEICA.

In the 2008 edition, the classification manual features a larger scope by adding next to the Adhesive the Sealant technologies and applications. More over the classification is fully aligned to the Classification used by ASC in USA.

We wish to express our thanks for the contribution provided by: ASC, FEICA working Group Statistic, Monique von Dungen (Chem-Research) and Dave Nick (DPNA International).

The classification manual defines the market segments and the product categories of the Adhesives and Sealants mostly used in both Europe and the USA. The new classification has been used to update the 2008 market report of Europe compiled by Chem-Research and of USA-Asia compiled by DPNA International.

These reports are available upon request at FEICA or ASC.

1. ADHESIVES - MARKET SEGMENTS

1.1 Paper, Board and related products

1.1.1 Converting/Packaging

- case and carton manufacture
- paper products and paper bags
- envelopes
- tube winding
- plastic bags
- flexible packaging,
- remoistenable gummed tapes, labels, stamps
- tissues and towels
- sterilized medical packages
- case and cardboard carton sealing
- labelling cans, bottles and other containers
- wrapping of foods, etc
- cigarettes manufacture; etc.

1.1.1* Exclusions

- Binding agents for the manufacture of corrugated board

1.1.2 Dry Lamination (film-to-film, film-to-foil, film-to-paper, etc.)

1.1.3 Wet Lamination (foil-to-paper)

1.1.4 High-Gloss Laminating for Graphic Arts
(OPP-to-paper/cardboard, other including cellulose, acetate-to-paper/cardboard)

1.1.5 Bookbinding, Graphic Art Industry integral binding of :

- paperback books
- edition-bound books
- magazines
- catalogues
- directories, etc.

1.1.6 Nonwoven Fabrics

- construction of disposable diapers
- diapers
- feminine hygiene products
- incontinence products
- surgical gowns, etc.

1.1.7 Pressure Sensitive Products

- Labels
- Tapes
- Decals
- Signs
- Stamps
- transfer films, etc.

1.2. Transportation

1.2.1 Passenger Cars/Light Trucks Assembly and Components (OEM)

1.2.2 Repair and Maintenance (aftermarket)

1.2.3 Trucks and buses (OEM)

1.2.4 Bicycles, motorcycles and recreational vehicles (caravans)

1.2.5 Aircraft/aerospace

1.2.6 Railway (including light rail vehicles-tram)

1.2.7 Shipbuilding and offshore

1.3 Footwear and Leather

1.3.1 Footwear (soling/sole attaching, lasting, box toes and counters, other applications repair aftermarket)

1.3.2 Leather Goods (handbags, travel goods, purses, etc.)

1.4 Consumer/do-it-yourself (Retail)

1.4.1 Household

1.4.2 Do-It-Yourself (school, office; all-purpose glues; contact adhesives; super glues, wood glues, two-component glues; hot melt sticks, etc.)

1.5 Building/Construction/Civil Engineering/Craftsmen

1.5.1 On-site Applications for new work, repair, maintenance, and renovations of flooring including:

- flooring : textile, PVC, linoleum, wooden and laminated, rubber and ceramic tile adhesives
- textile
- PVC and linoleum
- wooden and laminated
- rubber and ceramic tile adhesives
- wall covering including ceramic tile and textile adhesives
- ceiling attachment of sandwich panels
- wooden subflooring
- thermal insulation materials, etc.

1.5.2 Civil Engineering (bridges, etc.)

1.5.3 Off Site Applications

1.5.4 Factory Assembled Parts (roof trusses, wall sections, laminated beams, etc.)

1.5.5 Prefabricated Houses

1.6 Woodworking and Joinery

1.6.1 Cabinet making

1.6.2 Furniture Manufacture (high pressure laminate; edge gluing/banding; veneering; general assembly; etc.)

1.6.3 Window Frames, Door Manufacture

1.6.4 Upholstery

1.6*Exclusions

- primary wood bonding (forest products) binding agents for producing particle board (chipboard, medium density fibreboard, hardboard) and plywood

1.7 Assembly Operations/Other

1.7.1 Sandwich Panel Manufacture

1.7.2 Appliances and electrical/electronic

1.7.3 HVAC (Heating, ventilation, air conditioning)

1.7.4 Mechanical Equipment

1.7.5 Flexible Materials (Fabric/apparel, e.g., textiles, foam, Synthetic and Natural leather, Rubber Products)

1.7.6 Medical Applications

1.7.7 Sports Equipment and Toys

1.7.8 Abrasives, filters

1.7.9 Others (all other adhesives not included in any market segments or application sectors listed above)

1.7*Exclusions

- binder agents for foundry sand and adhesives/coatings for rug backing (carpets)

2. ADHESIVES - PRODUCT CATEGORIES

2.1 Adhesives Based on Natural Polymers

2.1.1 Vegetable Adhesives (dextrins and starches)

2.1.2 Protein Adhesives (casein and blood, fish, soybean, milk albumen etc.)

2.1.3 Animal glues, hides, bones, etc.

2.1*Exclusions

- adhesives raw material base
- natural rubber

2.2 Polymer Dispersion/Emulsion Adhesives

2.2.1 Vinyl acetate polymers and copolymers (PVAC)

2.2.2 Ethylene vinyl acetate Co- and Ter-polymers

2.2.3 Acrylics and acrylic copolymers

2.2.4 Styrene-butadiene Rubber (SBR)

2.2.5 Other Synthetic Rubber Lattices

2.2.6 Natural rubber latex

2.2.7 Polyurethane (PUR, PUD)

2.2.8 Others

2.2*Exclusions

- Cement based screeds, levelling compounds and tiling/flooring adhesives with a content of less than 50% synthetic polymers.

2.3 Hot melt adhesives

- 2.3.1 Polyolefin (PE, PP, APP)
- 2.3.2 Ethylene vinyl acetate (EVA)
- 2.3.3 Polyamide (PA)
- 2.3.4 Polyester, saturated (SP)
- 2.3.5 Styrene block copolymers (e.g., SBS, SIS, SEBS)
- 2.3.6 Polyurethane (thermoplastic, plus moisture-curing)
- 2.3.7 Acrylic and acrylic copolymers
- 2.3.8 Others (e.g., Polyimide)

2.4 Solvent based adhesive systems

- 2.4.1 Polychloroprene (CP)
- 2.4.2 Polyurethane (PUR)
- 2.4.3 Natural and synthetic rubbers
- 2.4.4 Acrylic
- 2.4.5 Silicone
- 2.4.6 Other

2.5 Reactive Adhesive Systems

(includes single and two-part thermoset plus UV/EB)

2.5.1 Epoxy (EP)

2.5.2 Polyurethane
(including moisture-curing types)

2.5.2* Exclusions

- Polyurethane hot melt types (listed under hot melts)

2.5.3 Polyester, unsaturated (UP)

2.5.4 Acrylics
(including cyanoacrylate, dimethacrylate/anaerobics; methacrylate, SGA structural acrylic, one and two part curing systems)

2.5.5 Silicones
(one and two part curing systems).

2.5.6 Formaldehyde Condensates
(phenolic, urea, melamine, resorcinol)

2.5.6* Exclusions

- Formaldehyde condensates used as binders in the manufacture of particleboard (chipboard, MDF, OSB, hard board) and in the manufacture of plywood

2.6 Adhesives Based on Water-Soluble Polymers

2.6.1 Polyvinyl Alcohol

2.6.2 Cellulose Ethers

2.6.3 Methylcellulose

2.6.4 Carboxymethylcellulose

2.6.5 Polyvinylpyrrolidone

2.6.6 Other (e.g., Polyvinylmethylether)

2.7 Other Adhesives

General (all other adhesives not included in any categories listed above, e.g., elastoplastic types)

3. SEALANTS - MARKET SEGMENTS

3.1 Construction

- 3.1.1 Construction and renovation
(residential, commercial, industrial, mobile/prefab home, metal buildings, roofing, etc.)
- 3.1.2 OEM and/or Maintenance Applications
(involving subcomponent fabrication, e.g., countertops, prefabricated trusses, curtain walls)
- 3.1.3 Insulating Glass, Glazing
(OEM, factory glazing, in-house glazing, etc.)
- 3.1.4 Heavy Construction
(highways, airfields, bridges, tunnels, etc.)

3.2 Transportation

- 3.2.1 Passenger cars/Light Trucks Assembly and Components
(OEM, glazing, NVH, body sealants, thread locking, etc.)
- 3.2.2 Trucks, buses, trailers
(OEM, NVH, glazing, body sealants, etc.)
- 3.2.3 Repair and maintenance
(aftermarket including glazing, body sealants, gasketing, etc.)
- 3.2.4 Commercial and recreational Watercraft
(OEM, glazing, body sealants, etc.)
- 3.2.5 Aircraft/aerospace
(glazing and body sealants, NVH, private, commercial)
- 3.2.6 Railway
(including light rail vehicles/mass transit, NVH, subcomponent fabrication)
- 3.2.7 Ships
(primarily engine and equipment bedding plus LNG tanks, Offshore oil platform)

3.3 Consumer/Do-It-Yourself (Retail)

- 3.3.1 Household, Do-It-Yourself
(includes caulks and/or sealants intended for retail sale in small packages)

Note : In some countries, this segment includes purchases by tradesmen of five or less employees.

3.4 Assembly/Other

- 3.4.1 Appliances
(e.g. refrigerators and freezers, HVAC)
- 3.4.2 Electronic Equipment Assembly
- 3.4.3 Metal Cabinets and Housings
- 3.4.4 Other
(caulks, sealants not included in market segments or applications listed above)

4. SEALANTS - PRODUCT CATEGORIES

4.1 Oil-Base Caulks

(includes Polymer modified versions)

4.2 Acrylics

(water-latex and solvent based, including “siliconised” versions)

4.3 Polyvinyl Acetate Caulks

4.4 Butyls

(Polyisobutylene)

4.4.1 Solvent based PIB Sealants

4.4.2 Preformed PIB strips

4.4.3 Hot Applied PIB Sealants

4.4.4 Gun-Dispensable and Pumpable Sealants

4.4.5 Reactive PIB sealant

4.5 Polysulfides

(1- and 2-part systems)

4.6 Polyurethanes

(1- and 2-part systems, sealants and foams)

4.7 Silicones

(1 and 2 part sealants and foams including moisture curing systems, water based, addition curing and reactive hot melt)

4.8 Silane Modified Polymers

(1- and 2-part systems, reactive hot melt, sealants and foams)

4.8.1 Silyl-terminated Polyethers (includes “MS” polymers)

4.8.2 Silyl-terminated Polyisobutylene (SiPiB)

4.8.3 Silyl-terminated Polyurethanes

4.8.4 Silicone modified Polyacrylate

4.8.5 Polyurea backbone

4.8.6 Mixed polymers

4.8*Exclusion

“siliconized” water-based products containing < 5% silane.

4.9 Other Sealants (not included above)

This can include

- processed-formulated Bitumens
- Bitumens,
- PVC body sealants,
- Preformed elastomerics
- Tapes.