

AAT-680 Ultimate Resilient Adhesive



AAT-680 is a highly specialized flooring adhesive that can be used for a wide variety of floor covering, such as sheet vinyl, LVP, SVT, LVT, VCT, rubber, linoleum and modular carpet. It has outstanding green strength, high final shear and tensile strengths, and a long open time¹. AAT-680 installation methods can vary from a traditional wet lay method, a mid-level wet tacky, and as a dry lay pressure sensitive [PSA] type of installation. It can also be used as a conventional dry lay when installing over existing non-absorbent flooring. AAT-680 can be applied directly over a wide variety of moisture sealers including two-part epoxy-based sealers. It is non-hazardous, is certified as "very low emission" by an independent laboratory, and is eligible for LEED points.

Prior to installation, the subfloor must be checked according to applicable flooring manufacturer and industry standards. The subfloor must be solid and sound, flat, permanently dry, clean, free of chaps, indentations and anti-adherents, as well as, resistant to pressure and tension.

The following conditions MAY NOT be present: hydrostatic pressure, excessive vapor emissions, missing or compromised vapor barrier, standing water or visible dampness, uneven and/or unapproved subfloor materials, improper substrate preparation, excessive exterior water (damaged water pipes, sinks, icemakers, faulty plumbing, flooding, etc.), excessive topical moisture, improper ventilation or conditioning, or faulty maintenance of flooring, use of adhesive as a moisture control system.

Moisture content of all floors must be measured before installation. Moisture content in concrete subfloors must be below 12lbs/24hrs/1,000 sq. ft. using the Calcium Chloride Test or less than 99% RH using the *in-situ* test per ASTM F1869 and F2170. If installing sheet goods the limitations are 85% and 8lbs, respectively. The pH of the sub-floor must be from 7-12 as determined by the method described in ASTM F3441. Sub-floors on and below grade must be protected from ground moisture with a functioning and intact Class A vapor retarder that conforms to the requirements of the most current version of ASTM E-1745. This vapor retarder must be directly beneath, and in contact with, the slab. Depending on type and condition of subfloor, a mechanical treatment (e.g. mechanical brushing, grinding or sanding) may be required. Intensity of such work must be determined at the site by the installer. Dust, paint, residual adhesives or other surface contaminants must be removed by suitable means. Cleaning the surface with an industrial vacuum cleaner is recommended. Cracks and gaps must be filled with concrete crack filler unless they are expansion joints. Level when necessary to 3/16 inches within 10 feet. Heated subfloors, gypsum cement, wooden subfloors, levelers, patches and light weight concrete must be primed with either AAT-570 Primer or AAT-712 Epoxy Primer, depending upon the sub-floor conditions. Fast curing cementitious leveling or patching compounds might reduce the flash and work time of water based products due to absorption.

AAT-680 Ultimate Resilient Adhesive can be used over the following sub-floors with a maximum moisture emission rate of 12lbs/1000 sq. ft. /24 hours [ASTM F1869], a pH of 7.0- 12 [ASTM F710], and a maximum *in situ* RH of 99% [ASTM F2170]. When installing sheet vinyl the maximum MVER is 8lbs and the maximum *in situ* RH is 85%.

- Concrete on, above and below grade
- Properly prepared gypsum cement
- Cutback mastic (well bonded, not brittle, tested negative for asbestos)
- OSB (underlayment grade)
- Plywood (underlayment grade)
- Felt backed Sheet Vinyl (well bonded, sanded, asbestos-free)
- Ceramic tiles
- Stone, Terrazzo
- Cured leveling compounds
- Radiant heated sub-floors
- Metal floors
- Asphalt
- Stained concrete (well bonded)

NOTE: Before beginning installations with flooring types or over sub-floors not listed contact AAT Technical Services for recommendations. While some Lauan plywood panels are widely marketed as “underlayments”, there are a variety of qualities and species sold as such. Some varieties present severe problems when used as underlayments. Frequent problems noted are discoloration, indentation, bond failure, and underlayment delamination. AAT will not warrant the adhesive when applied over Lauan plywood. AAT-680 cannot be used if adhesive removers, solvent or chemical cleaners have been used. Regulations may require that existing flooring material or coatings be tested to determine the asbestos content. Refer to the instructions for removal and handling of resilient flooring published by the RFCI in the publication, Recommended Work Practices for Removal of Resilient Floor Coverings. The Resilient Floor Covering Institute may be reached thru their Website www.rfci.org or by calling 301-340-8580.

Installation Recommendations: The building should be completely enclosed. All outside doors and windows should be properly installed with latching mechanisms in place. Adequate ventilation should be available. The HVAC system for the building should be operational and provide a consistent temperature of 50-90°F (air and sub-floor) and humidity levels should be between 30-80% for a minimum of 72 hours prior to the installation. These conditions must be maintained to ensure the long term success and performance of the installation.

Spread the adhesive with the appropriate notched trowel. Avoid excessive adhesive thickness by passing the trowel evenly through the adhesive at a 45 degree angle. Observe the appropriate flash time (if applicable). Lay the flooring into the adhesive, correctly position it and press down firmly. Be sure to check the back of the flooring to make certain good adhesive transfer from subfloor to flooring is achieved. Roll flooring approx. 15-30 min after installation with a 75-100# roller if recommended by the flooring manufacturer. Push down raised edges approx. 30-60 min after installation. Use 1/16" x 1/16" x 1/16" V notched trowel for all general installations, except in the following cases: **a) use 1/32" x 1/16" x 1/32" U or square notched trowel if thin, non-porous floorings** (Sheet Vinyl, VCT, LVT, LVP, SVP or thin Rubber flooring) are installed over non-porous subfloors using the dry-lay or pressure sensitive installation. **b) use a 3/32" x 3/32" x 3/32" V notched trowel to install thick, heavy and/or large flooring tiles as well as heavy sports flooring or thick flooring with heavy traffic on porous subfloors.** When installing thin, non-porous floorings (including, but not limited to VCT, LVT, LVP, SVT, Sheet Vinyl) over a non-porous subfloor (including, but not limited to speed troweled concrete, epoxy and other moisture barriers, cutback mastic) a dry-lay or pressure sensitive installation method must be used. The adhesive should be tacky but not transfer to your skin when placing your hand lightly onto the adhesive.

Flooring placed into wet or “wet-tacky” adhesive should be protected from foot traffic for at least 12 hours and heavy and/or roller traffic (including the placement of heavy furniture) for a minimum of 24 hours. Installations over “dry”, pressure sensitive adhesive can be exposed to light traffic immediately.

Trowel Recommendations:*

LVP, LVT, VCT: 1/32”x1/16”x1/32” U or square notch | up to 250 sf/gal
Flat backings: 1/16” x 1/16” x 1/16 V notch | up to 180 sf/gal.
Sport Flooring: 3/32” x 3/32” x 3/32” V notch | up to 135 sf/gal.

Note: Trowel Notch dimensions are Width x Depth x Separation

Specific Technical Data:

A. Base: Acrylic Dispersion

B. Color: Cream

C. Clean-up: Remove wet adhesive with water and mild soap solution. Use AAT-197 Adhesive Remover to remove dried adhesive. Dried adhesive may be more difficult to remove; therefore, take care to remove adhesive from the surface of the flooring before it dries. DO NOT apply the solvent directly to the flooring material.

D. Packaging: 3 gallon pails

E. Shelf-Life: Two years from date of manufacture in un-opened container when stored at 70°F.

F. Freeze-Thaw Stable to 10°F. Stability and spread-ability can be affected if allowed to freeze. Frozen material should be allowed to thaw at room temperature. DO NOT agitate or stir while frozen.

G. VOCs: 0 g/l (Calculated per Ca. Rule 1168)

H. Not recommended for exterior installations.

NOTE: We recommend installers follow the guidelines set forth in the flooring manufacturer’s specific recommendations. Before placing the flooring, the adhesive must be allowed an open or dwell time appropriate for the flooring product, jobsite and sub-floor conditions. ¹AAT-680 has an extended working time of up to two hours after the initial drying if the area is kept dust free. It is extremely important to maintain recommended notch depth, width and spacing. The proper notch depth is that which will produce adhesive ridges that affect a 100% transfer to both the substrate and the backing of the flooring to include the inner recesses of the texture of the back.

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1 Identification

- **Product identifier**
- **Trade name:** AAT-680
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Advanced Adhesive Technologies LLC
424 South Spencer Street
Dalton, GA 30721
Tel: 800-228-4583
Fax: 706-278-6207
- **Emergency telephone number:** CHEMTREC 1-800-424-9300 (USA) 1-703-527-3887 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
The product is not classified, according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**

 - Health = 0
 - Fire = 0
 - Reactivity = 0
- **WHMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

64-17-5	ethanol	2.5-10%
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- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air.
- **After skin contact:** Generally the product does not irritate the skin.

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- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
· *Most important symptoms and effects, both acute and delayed* No further relevant information available.
· *Indication of any immediate medical attention and special treatment needed*
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Wear protective clothing.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

64-17-5	ethanol	1,800 ppm
10361-03-2	sodium metaphosphate	2.7 mg/m ³
1310-73-2	sodium hydroxide	0.5 mg/m ³

- **PAC-2:**

64-17-5	ethanol	3300* ppm
10361-03-2	sodium metaphosphate	30 mg/m ³
1310-73-2	sodium hydroxide	5 mg/m ³

- **PAC-3:**

64-17-5	ethanol	15000* ppm
10361-03-2	sodium metaphosphate	180 mg/m ³
1310-73-2	sodium hydroxide	50 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.

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- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
 - *Requirements to be met by storerooms and receptacles:* No special requirements.
 - *Information about storage in one common storage facility:* Not required.
 - *Further information about storage conditions:* Protect from frost.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

64-17-5 ethanol

PEL	Long-term value: 1900 mg/m ³ , 1000 ppm
REL	Long-term value: 1900 mg/m ³ , 1000 ppm
TLV	Short-term value: 1000 ppm
	A3

- *Additional information:* The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
 - *General protective and hygienic measures:*
The usual precautionary measures for handling chemicals should be followed.
Wash hands before breaks and at the end of work.
 - *Breathing equipment:* Not necessary if room is well-ventilated.
 - *Protection of hands:* Not required.
 - *Material of gloves*
Natural rubber, NR
Butyl rubber, BR
Nitrile rubber, NBR
 - *Eye protection:* Goggles recommended during refilling.
 - *Body protection:* Protective work clothing

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- *Appearance:*

<i>Form:</i>	Solid
<i>Color:</i>	Light yellow
<i>Odor:</i>	Weak, characteristic
<i>Odor threshold:</i>	Not determined.
- **pH-value at 20 °C (68 °F):** 7.5
- **Change in condition**

<i>Boiling point/Boiling range:</i>	100 °C (212 °F)
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- **Flash point:** Not applicable.
- **Flammability:** Not applicable.

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- **Decomposition temperature:** Not determined.
- **Ignition temperature:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
 - Lower:* Not determined.
 - Upper:* Not determined.
- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)
- **Density at 20 °C (68 °F):** 1.13 g/cm³ (9.42985 lbs/gal)
- *Relative density* Not determined.
- *Vapor density* Not determined.
- *Evaporation rate* Not determined.
- **Solubility in / Miscibility with**
 - Water:* Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic at 20 °C (68 °F):* 25,000 mPas
 - Kinematic:* Not determined.
- **Solvent content:**
 - Organic solvents:* 4.0 %
 - Water:* 21.6 %
 - VOC Content:* 4.00 %
 - 4.00 %
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· *LD/LC50 values that are relevant for classification:*

64-17-5 ethanol

Oral	LD50	5,560 mg/kg (mee) 3,450 mg/kg (mou) 7,060 mg/kg (rat) 6,300 mg/kg (rabbit)
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- **UN proper shipping name**
- **DOT, ADR, ADN, IMDG, IATA** Void
- **Transport hazard class(es)**
- **DOT, ADR, ADN, IMDG, IATA**
- **Class** Void
- **Packing group**
- **DOT, ADR, IMDG, IATA** Void
- **Environmental hazards:**
- **Marine pollutant:** No
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **UN "Model Regulation":** Void

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- *Sara*

- *Section 355 (extremely hazardous substances):*

None of the ingredient is listed.

- *Section 313 (Specific toxic chemical listings):*

None of the ingredients is listed.

- *TSCA (Toxic Substances Control Act):*

7732-18-5	water, distilled, conductivity or of similarpurity	ACTIVE
1317-65-3	calciumcarbonate	ACTIVE
91081-53-7	modifiziertes Kolophonium	ACTIVE
64-17-5	ethanol	ACTIVE
68610-51-5	phenol, 4-methyl-, reaction products with dicyclopentadiene and isobutylene	ACTIVE
	Emulan EL	ACTIVE
	Agitan	*
9003-04-7	2-propenoic acid, homopolymer, sodium salt	ACTIVE
10361-03-2	sodium metaphosphate	ACTIVE

- *Hazardous Air Pollutants*

None of the ingredients is listed.

- *Proposition 65*

- *Chemicals known to cause cancer:*

None of the ingredients is listed.

- *Chemicals known to cause reproductive toxicity for females:*

None of the ingredients is listed.

- *Chemicals known to cause reproductive toxicity for males:*

None of the ingredients is listed.

- *Chemicals known to cause developmental toxicity:*

64-17-5 | ethanol

- *Canadian Ingredient disclosure list*

- *Limit 0,1%*

64-17-5 | ethanol

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· **Limit 1%**

None of the ingredients is listed.

· **Cancerogenity categories**· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

64-17-5 ethanol

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· **MAK (German Maximum Workplace Concentration)**

64-17-5 ethanol

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· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **National regulations:**· **Technical instructions (air):**

Class	Share in %
Wasser	10-25
NK	2.5-10

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:** Tel: 800-228-4583· **Date of preparation / last revision** 12/23/2024 / -· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

US