



Technical Data Sheet [TDS]

## AAT-690 Polymer Wood Flooring Adhesive

AAT-690 is an advanced formula polymer designed for professional wood flooring installation of engineered wood flooring, parquet and acoustic underlayments. It replaces isocyanate-containing urethane adhesives. It is ozone and environmentally safe and contains no hazardous materials. Because there is no water or solvent present, it will not cause cupping or expansion of the wood flooring. This adhesive is waterproof when fully cured and will not dissolve if it gets wet. However, it will not prevent moisture-related damages to wood flooring.

The adhesive spreads easily and has a non-slump formula that will help insure contact and adhesive transfer. It allows fast installation even with complicated patterns due to its strong green grab. There is no flash time required, so installation can begin immediately. It offers superior flexibility and is designed to keep the flooring in place, yet allow for normal movement during seasonal changes to the flooring. This adhesive qualifies for LEED credits.

Prior to the start of the installation the installer must determine that the job-site conditions meet or exceed all applicable standards of the wood flooring manufacturer and AAT. For the best results, we suggest using a National Wood flooring Association Certified Professional installer. Installation of hardwood flooring should be one of the last jobs of any construction project. The sub-floor should be prepared according to the standards and practices set forth in the most recent version of the document ASTM F-710.

*For assistance with specific sub-floors and exotic wood species please contact our Technical Services Department. **DO NOT install solid wood flooring below grade.** AAT-690 is not for use with wood flooring manufactured from Bamboo, Kempas or Teak wood. AAT-690 cannot be used if adhesive removers, solvent or chemical cleaners have been used. For a copy of the Limited Lifetime Warranty please contact Customer Service.*

### **Site Conditions:**

The building should be completely enclosed. All outside doors and windows should be properly installed with latching mechanisms in place.

Landscaping should be sufficiently completed to direct water away from the building. Gutters and downspouts should be in place.

All concrete, masonry, plastering, drywall and other wet work should be completed and thoroughly dry prior to beginning the installation. Texturing and paint primer coats should be completed. Where possible the installation of the base molding should not take place until after the wood flooring has been installed.

Adequate ventilation should be available. The HVAC system for the building should be operating for a minimum of 72 hours prior to the start of the installation. The flooring should not be exposed to extremes of temperature, humidity or moisture. The installation site should have a consistent air temperature of 50°F-90°F and relative humidity levels should be 30% - 80% for a minimum of 72 hours prior to the start of the installation. The temperature of the sub-floor should be between 65°F-

85°F. These conditions must be maintained to ensure long-term success and performance of the wood flooring installation.

Basements and crawl spaces should be dry and adequately ventilated. Sub-floors must be checked for moisture content and emissions using industry accepted methods. Crawl spaces should meet local building codes regarding minimum heights, cross ventilation and the use of vapor retarders.

Sub-floors must be free from dust, dirt, grease, wax, curing agents, sealers, oil and any other bond inhibiting substances. The sub-floor should be flat within 3/16" in 10' or 1/8" in 6'. Please note that popping wood floors or a hollow spot(s) in a hardwood flooring installation is not an adhesive related issue. Rather, these conditions result from the lack of sufficient sub-floor preparation.

Prior to the application of AAT-690, sub-floors must be tested in strict accordance to the most recent versions of ASTM F-1869 and F-2170. Both testing protocols must be performed in order to provide the most accurate view of the sub-floor's condition. Sub-floors of lightweight concrete must be tested in strict accordance to the most recent version of ASTM F-2170. The placement of calcium chloride kits and humidity probes must follow the ASTM standards for proper locations and the correct quantity of test sites. These and other tests may be performed by AAT in the event of a warranty claim.

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. Concrete must be dry with moisture emission rates 3 lbs./1000 sq ft/24 hrs, as measured by the Anhydrous Calcium Chloride Test, ASTM F-1869. Lightweight concrete and gypsum cement can only be tested according to the requirements of ASTM F-2170. For gypsum cement, densified and lightweight concrete the *in situ* relative humidity should not exceed 75%. When used in conjunction with a special clip-on blade (sold separately) 690 may be used up to 8 lbs./1000 sq ft/24hrs and 90% in situ RH. Before any moisture testing begins, the slab must be cured for a minimum of 30 days and the HVAC system must be operating for a minimum of 72 hours. Fill low areas with a polymer-modified portland cement leveling or patching compound. Leveling and patching compounds must be tested to ensure they are properly cured and within the manufacturer's specified requirements before proceeding with the installation. Mechanical surface profiling is the preferred sub-floor preparation method. Mechanically profile the sub-floor to medium-grit sandpaper texture. Sanding or scouring with open paper or a titanium disk is preferred. All curing agents [topical and admix], adhesives, paints, varnishes, oils, waxes, dust, dirt and any other bond inhibiting substances must be removed. The removal of bond inhibiting substances must be by mechanical means: sanding, shot or bead blasting. AAT-690 cannot be used if adhesive removers, solvent or chemical cleaners have been used. Lightweight concrete and gypsum cement must be primed with AAT-570 Acrylic Primer before applying the adhesive.

For wood joist systems the sub-floor should be structurally sound, free of loose panels or boards, and free of protruding fasteners. Moisture content should be within normal industry standards for the areas average environmental conditions. Underlayment panels should be fastened according to the manufacturer's specifications. All panel seams should be sanded level and prepared according to the manufacturer's instructions. Sanded and other very porous substrates must be primed with AAT-570 Acrylic Primer. Minimum sub-flooring: 5/8" CDX plywood sub-floor/underlayment (Exposure 1), maximum 16" o.c. construction. Install the flooring perpendicular to the floor joists. Moisture content of wood sub-floors should be below 6-9% when measured with a moisture meter for wood. Moisture content of the sub-floor and the wood flooring should vary no more than 4%. Do not use AAT-690 to install flooring over AdvanTech® plywood panels.

Wood flooring may be installed over existing full spread sheet vinyl and vinyl tiles (non-embossed and non-cushion backed) if the existing flooring is well bonded. Clean the surface thoroughly and de-

gloss the surface using an abrasive pad to create a suitable sub-floor. The wear layer must remain intact. Resilient sub-floors must be free from dust, dirt, grease, wax, sealers, oil and any other bond inhibiting substances. These substances must be removed with the appropriate stripper/removers. Vacuum the entire area, mop thoroughly and allow it to dry before proceeding. Existing flooring that has any texture must be leveled with a latex fortified embossing leveler. The substrate must be plumb and flat to within 3/16" in 10' and 1/8" in 6'. Imperfections and irregularities must be corrected before applying the adhesive. Fill low areas with a polymer-modified Portland cement based patching or leveling compound. Leveling compounds must be tested to ensure they are properly cured and within the manufacturer's specified requirements before proceeding with the installation. Repair or replace any loose flooring products before applying this adhesive. *Never sand any resilient flooring that may contain asbestos fibers.*

Wood flooring may be installed over existing ceramic tile and terrazzo floors. All grout joints and broken tiles must be filled with a polymer-modified, portland cement leveling or patching compound. Surfaces should be cleaned and abraded to ensure a proper bond. Ceramic tiles must be securely fastened to the sub-floor. Loose tiles must be replaced or repaired. Ceramic and terrazzo sub-floors must be free from dust, dirt, grease, wax, sealers, oil and any other bond inhibiting substances. Wood flooring may be installed over full spread, permanently bonded acoustic cork. Cork thickness should not exceed 1/4" (6mm) and should have a density between 11.4 and 13 lb. /cubic foot. Install cork in accordance with manufacturer's recommendations. Acoustic cork should be pure cork with a polyurethane binder.

Slabs with a radiant heating system are acceptable sub-floors for installing wood floors with the following stipulations. The heating system should be fully operational for a minimum of seven days prior to the installation. The system should be shut down to allow the slab to cool down to room temperature before applying the adhesive. Immediately after completing the installation turn the system back on and set to normal temperature. The sub-floor cannot exceed 85°F throughout the life of the installation. Check with the system manufacturer to determine that the system is designed for the desired R-rating for wood flooring. Failure to ensure proper system design can result in excessive heat damage and wood shrinkage.

NOTE: Prior to the beginning of the installation the wood flooring, adhesive and sub-floor must be acclimated in an enclosed building with the HVAC operating for a minimum of 72 hours. Wood flooring must be exposed to the air when being acclimated.

**INSTALLATION:**

1. Follow wood flooring manufacturer's instructions for acclimation, layout, requirements for expansion space and any special precautions for the installation.
2. Apply adhesive with the recommended trowel. (See below) A 100% adhesive transfer rate to the wood flooring is required. There is no flash time, so installation should begin immediately. Lay the flooring into the adhesive, correctly position it and press down firmly. Rolling is neither required nor recommended.
3. Occasionally lift a piece of flooring to assure that a 100% adhesive transfer is achieved.

| <b>Open Times</b>            | <b>+50°F</b> | <b>+70°F</b> | <b>+90°F</b> |
|------------------------------|--------------|--------------|--------------|
| <b>30% Relative Humidity</b> | 120 minutes  | 105 minutes  | 70 minutes   |
| <b>50% Relative Humidity</b> | 105 minutes  | 90 minutes   | 60 minutes   |
| <b>80% Relative Humidity</b> | 75 minutes   | 60 minutes   | 45 minutes   |

4. Leave appropriate expansion space around the perimeter of the room and at any stationary objects.
5. If plank is bowed or warped, use weights or nails to ensure flooring is in full contact with the adhesive during the adhesive curing process. Excessively bowed or warped planks should be culled prior to installing the flooring.
6. Furniture placement and foot traffic should be restricted for a minimum of 24 hours.

**TROWEL RECOMMENDATIONS:\*\***

Engineered Wood Floors  
 3/16" X 1/4" x 5/16" V notch  
 50-60 sq ft/gal

As Moisture Barrier  
 1/8" x 5/32" x 3/16" x 5/64" V notch with pins  
 30-35 sq ft/gal

Parquet  
 1/8" x 1/8" x 1/8" L notch  
 70-80 sq. ft. /gal.

Acoustical Underlayments  
 3/32" x 3/32" x 3/32" V notch  
 100-110 sq. ft./gal.

**\*\*Note: Trowel Notch dimensions are Width x Depth x Separation\*\***

**SPECIFIC TECHNICAL DATA:**

1. VOC compliant, LEED qualified formula; no chlorinated solvents, no isocyanates, nonflammable
2. Clean-Up: Remove uncured adhesive with acetone. Do not apply the acetone directly to the flooring material. Test on a scrap piece of flooring to ensure that the solvent does not affect the floor's finish. Cured adhesive can be removed with a plastic scrapper and a clean towel.
3. Packaging: 4 gallon pails
4. Shelf-Life: 12 months from date of manufacture in un-opened container when stored at 70°F.
5. Freeze-Thaw Stable

May 29, 2018

# Safety Data Sheet

## acc. to OSHA HCS


Printing date 10/19/2017

Reviewed on 10/19/2017

### 1 Identification

- **Product identifier** Wood Flooring Adhesive
- **Trade name:** AAT-690
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Details of the supplier of the safety data sheet**
- **Distributor:**  
Advanced Adhesive Technologies  
424 S Spencer St  
Dalton, GA 30721  
Phone 800-AAT-GLUE  
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).
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Not applicable.
- *Information concerning particular hazards for human and environment:*  
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- *Classification system:*  
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **Label elements**
- **Labelling according to EU guidelines:**  
Observe the general safety regulations when handling chemicals.  
The product is not subject to identification regulations according to directives on hazardous materials.
- *Safety phrases:*  
Do not empty into drains.  
This material and its container must be disposed of as hazardous waste.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**  


|                |
|----------------|
| Health = 0     |
| Fire = 1       |
| Reactivity = 0 |
- **WHMIS-ratings (scale 0 - 4)**  

|            |   |                |
|------------|---|----------------|
| HEALTH     | 1 | Health = 1     |
| FIRE       | 1 | Fire = 1       |
| REACTIVITY | 0 | Reactivity = 0 |
- **Results of PBT and vPvB assessment**
- *PBT:* Not applicable.

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**Trade name:** AAT-690

· vPvB: Not applicable.

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### 3 Composition/information on ingredients

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

- **Dangerous components:**

|            |                                            |         |
|------------|--------------------------------------------|---------|
| 64742-88-7 | Solvent naphtha (petroleum), medium aliph. | 2.5-10% |
|------------|--------------------------------------------|---------|

- **Additional information:** For the wording of the listed risk 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; consult doctor in case of complications.
- **After skin contact:** Generally the product does not irritate the skin.
- **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:**  
CO<sub>2</sub>, 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 product to reach sewage system or any water course.  
Inform respective authorities in case of seepage into water course or sewage system.  
Dilute with plenty of water.

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- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **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:* None.
- **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 item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.  
*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:* Butyl rubber, BR
  - *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> | According to product specification |
| <i>Odor:</i>  | Characteristic                     |

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|                            |
|----------------------------|
| <b>Trade name:</b> AAT-690 |
|----------------------------|

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- |                                                   |                                               |
|---------------------------------------------------|-----------------------------------------------|
| · <i>Odour threshold:</i>                         | Not determined.                               |
| · <b>pH-value:</b>                                | Not determined.                               |
| · <b>Change in condition</b>                      |                                               |
| <i>Boiling point/Boiling range:</i>               | Undetermined.                                 |
| · <b>Flash point:</b>                             | 101 °C (214 °F)                               |
| · <b>Flammability (solid, gaseous):</b>           | Not applicable.                               |
| · <b>Ignition temperature:</b>                    | 265 °C (509 °F)                               |
| · <i>Decomposition temperature:</i>               | Not determined.                               |
| · <b>Auto igniting:</b>                           | Product is not selfigniting.                  |
| · <b>Danger of explosion:</b>                     | Product does not present an explosion hazard. |
| · <b>Explosion limits:</b>                        |                                               |
| <i>Lower:</i>                                     | Not determined.                               |
| <i>Upper:</i>                                     | Not determined.                               |
| · <b>Vapor pressure:</b>                          | Not determined.                               |
| · <b>Density at 20 °C (68 °F):</b>                | 1.5 g/cm <sup>3</sup> (12.518 lbs/gal)        |
| · <i>Relative density</i>                         | Not determined.                               |
| · <i>Vapour density</i>                           | Not determined.                               |
| · <i>Evaporation rate</i>                         | Not determined.                               |
| · <b>Solubility in / Miscibility with</b>         |                                               |
| <i>Water:</i>                                     | Not determined.                               |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined.                               |
| · <b>Viscosity:</b>                               |                                               |
| <i>Dynamic:</i>                                   | Not determined.                               |
| <i>Kinematic:</i>                                 | Not determined.                               |
| · <b>Solvent content:</b>                         |                                               |
| <i>Organic solvents:</i>                          | 6.0 %                                         |
| <i>VOC Content:</i>                               | 6.0 %                                         |
|                                                   | 6.00 %                                        |
| · <b>Other information</b>                        | No further relevant information available.    |

### 10 Stability and reactivity

- **Reactivity**
- **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.

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**Trade name:** AAT-690

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### 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

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

**64742-88-7 Solvent naphtha (petroleum), medium aliph.**

|            |           |                   |
|------------|-----------|-------------------|
| Oral       | LD50      | >6500 mg/kg (rat) |
| Dermal     | LD50      | >3000 mg/kg (rab) |
| Inhalative | LC50/48 h | >14 mg/l (rat)    |

- *Primary irritant effect:*

- *on the skin:* No irritant effect.

- *on the eye:* No irritating effect.

- *Sensitization:* No sensitizing effects known.

- **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- *Carcinogenic categories*

- *IARC (International Agency for Research on Cancer)*

None of the ingredients is listed.

- *NTP (National Toxicology Program)*

None of the ingredients is listed.

- *OSHA-Ca (Occupational Safety & Health Administration)*

None of the ingredients is listed.

### 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:** Not known to be hazardous to water.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:** Smaller quantities can be disposed of with household waste.

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**Trade name:** AAT-690

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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- **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.

### 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):*

All ingredients are 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:*

None of the ingredients is listed.

- *Canadian Ingredient disclosure list*

- *Limit 0,1%*

None of the ingredients is listed.

- *Limit 1%*

None of the ingredients is listed.

- *Carcinogenity categories*

- *EPA (Environmental Protection Agency)*

None of the ingredients is listed.

- *TLV (Threshold Limit Value established by ACGIH)*

None of the ingredients is listed.

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**Trade name:** AAT-690

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- *MAK (German Maximum Workplace Concentration)*

None of the ingredients is listed.

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

None of the ingredients is listed.

- **Product related hazard informations:**

- *Hazard symbols:*

The product is not subject to identification regulations according to directives on hazardous materials.

- *Safety phrases:* Keep out of the reach of children.

- **National regulations:**

- *Technical instructions (air):*

| Class | Share in % |
|-------|------------|
| 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.

- **Department issuing SDS:** Technical Department

- **Contact:** +1-800-228-4583

- **Date of preparation / last revision** 10/19/2017 / -

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