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## Effects of Moisture on Engineered Wood Products

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Louisiana-Pacific (LP) SolidStart Engineered Wood Products (EWP) are manufactured to exacting standards under rigorous quality systems. The products leave manufacturing facilities dry, with oven-dried (OD) moisture content averages under 10% for LSL, LVL and LVL-flanged LPI Joists (i.e. LPI 36 and 56 series.) The kiln-dried lumber flanges on the LPI 18, 20Plus, 32Plus, 42Plus and 52Plus joist series have moisture content averages less than 19% (OD), which is common for sawn lumber.

With few exceptions, all untreated wood products, including LP's EWP products, are intended for dry-use applications and not meant for prolonged exposure to moisture. Dry-use is typically defined as protected (covered) conditions where the moisture content of wood products will not exceed 16% (OD). Elevated moisture levels can promote fungal decay with the right combination of moisture, oxygen and temperature. The structural properties of wood products, treated or untreated do decrease as their moisture content increases. Wood product dimensions swell as moisture is absorbed and shrink as drying occurs. Prolonged moisture exposure can make wood products unsuitable for use.

### ***What do these effects mean for distributors, dealers and builders?***

Wood products should be protected. LP does provide guidelines for storage and handling – keep wood products wrapped, off the ground and stacked appropriately. These guidelines help wood products stay clean, shed rain, and promote air circulation to help dry incidental moisture.

Wood products will tolerate normal construction conditions at the job-site, including rain. Wood products that have been installed typically have good air circulation and dry quickly, once the rain stops or the structure is “dried in”. Avoid installing wet wood products – they may not have their full strength or stiffness and have swelled dimensions. If wood products are installed wet, let them dry appropriately before continuing installation of other construction materials. The diminished stiffness of wet wood will allow more deflection than if dry, and may take on permanent sag as drying does occur.

### **How much moisture exposure is too much?**

There is no universal answer. Normal, short-term construction delays are typically not problems as strength, stiffness and near-original dimensions will return as wood products dry. Extended delays or improper storage may cause excessive and possibly permanently swelled dimensions, reduced structural properties, and allow for fungal decay. Exposure to cyclic wet/dry conditions can intensify these effects.

Numerous resources are available that provide additional information on the effects of moisture on wood products. LP's third-party inspection and audit agency, APA – The Engineered Wood Association, has an excellent publication entitled *Proper Storage and Handling of I-Joists and LVL (Form No. EWS E705)*, and the document is available online at [www.apawood.org](http://www.apawood.org) at no cost. LP SolidStart Technical Guides and Installation Detail sheets can also be referred to for additional information on product handling and storage guidelines. For further questions, do not hesitate to contact your LP Representative.

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**1.888.820.0325 or email [customer.support@lpcorp.com](mailto:customer.support@lpcorp.com)**

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California Prop 65 Warning: Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.
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