sheathing products from Dow Sheathing. However, similar although STYROFOAM SIS™®™Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow can be used for lateral bracing.

One product. STYROFOAM SIS™ benefits of continuous insulation, Brand Sheathing combines the foam sheathings are non-structural, of all have low water vapor permeance

Other Insulated Foam Sheathing

Similar to STYROFOAM® Brand Sheathing, these products all have low water vapor permeance of 0.3 perm, and can be installed as a WRB. Typically, insulated sheathing are non-structural, although STYROFOAM® Brand Sheathing combines the benefits of continuous insulation, WRB and structural bracing into one product. STYROFOAM® Brand Sheathing is the only insulation product from Dow that can be used as a lateral bracing.

The following building scientists and researchers recognize the moisture protection advantage of insulated sheathing in wall construction.

The insulated effect of the foam sheathing does have the effect of keeping the stud cavity at a higher temperature during the winter than a similar cavity using plywood or Nailable sheathing.

USDA Forest Products Laboratory. Research Paper FPL 433

Lume exterior insulating sheathing in place of or in addition to plywood or fiberboard sheathing. It is generally recognized to greatly reduce the risk of mold, the long-term moisture levels and the long-term potential for wood decay.

– Northwest Wall Moisture Study, George A. Tronca, Ph. D. – laboratory tests showed that the addition of an exterior low-permeability insulation retrofit system would result in a reduction in the moisture accumulation within the existing stud and sheathing. These findings are consistent with the results of a limited field study. The model showed that the addition of the exterior retrofit insulation system raised the temperature of the stud cavity-insulation and the wood-fiber sheathing.

Heritage for Humanity is a registered service mark owned by Habitat for Humanity International.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No materials supplier assumes no liability for the information in this document. NO EXPRESS WARRANTIES ARE GIVEN EXCEPT FOR ANY APPLICABLE

TECH SOLUTIONS 214.0 Reduce Wall Condensation Potential with Insulated Sheathing

Dow Polyisocyanurate Insulation

Dow Polyisocyanurate Insulation

Dow Polyisocyanurate Insulation

Dow Polyisocyanurate Insulation

Dow Polyisocyanurate Insulation

Dow Polyisocyanurate Insulation

Dow Polyisocyanurate Insulation

Dow Polyisocyanurate Insulation

Dow Polyisocyanurate Insulation

Reference materials added to the outside of an existing wall system have already been studied. SIA 2005 Permeability Standards for Insulation Materials are available in three different formats. See Table 3 for details on the different versions.

... laboratory tests showed that the addition of an exterior low-permeability insulation retrofit system would result in a reduction in the moisture accumulation within the existing stud and sheathing. These findings are consistent with the results of a limited field study. The model showed that the addition of the exterior retrofit insulation system raised the temperature of the stud cavity-insulation and the wood-fiber sheathing.

Insulated sheathing provides exceptional moisture protection performance in residential walls versus traditional span-bonded plywood housewrap with oriented strand board (OSB) or oriented strand board.

Increasing stud cavity temperature is critical to managing the potential for condensation in residential light framed wall designs. The high R-value of exterior wall insulation increases stud cavity temperature, creating improved moisture protection advantage over other non-insulated sheathing materials.

The moisture content was analyzed in two types of wall assemblies – an assembly using STYROFOAM® Brand Structural Insulated Sheathing and one using housewrap and OSB. Testing was performed in both hot and cold climate scenarios. Neither of the wall assemblies experienced moisture content greater than 20 percent, which is the generally accepted threshold for potential mold growing conditions with wood-based products. The analyses contained in this document on insulated sheathing results in drier stud cavities than non-insulated sheathing in both hot and cold climates.
Methodology

Two residential wall systems were compared using the WUFI® PRO (version 3.3) heat and moisture analysis tool for building envelope simulation. WUFI® is recognized as a highly advanced method of hygrothermal modeling by North American organizations such as ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) and the Canadian National Energy Board and Thermal Envelope Council. WUFI® PRO modeling is well documented and has been validated by many comparisons between calculated and field performance data.

The wall systems compared were identical except for the sheathing materials. Two factors were the same for both wall systems. The time period modeled was two years, with a start date of October 1. Three sheathing materials were modeled: 3/4” STYROFOAM SIS® Brand Structural Insulated Sheathing and housewrap/OSB. The results are shown in Figures 3 and 4.

Findings

The wall temperature of the STYROFOAM SIS® Brand Structural Insulated Sheathing was also monitored during the two-year period. During the winter months, the indoor surface temperature was about 1°F warmer than the housewrap/OSB. The results are shown in Figures 5 and 6.

Key points for the model were:
- Mean relative humidity: 40 percent with an amplitude of 10 percent.
- Mean interior temperature: 72°F with an amplitude of 1.8°F.
- Two coats of latex paint on drywall, 3 per cent.
- No interior vapor retarder (e.g., polyethylene).
- 13.5 R-glass batts, unfaced.
- Housewrap, 59 per cent.
- OSB, <1 perm.
- STYROFOAM SIS® Brand Structural Insulated Sheathing is a multilayer product: facer, foam and laminated fiber layer.
- Exterior STYROFOAM SIS® Brand Sheathing facer, 3/32 thickness.

WUFI® Results: Cold Climate Comparison

A comparison of the two wall systems was made in the northern cold weather climate profile of Chicago (ASHRAE Climate Zone 5). Except for the sheathing materials, all other factors were the same for both wall systems. The time period modeled was two years, with a start date of October 1. Three sheathing materials were modeled: 3/4” STYROFOAM SIS® Brand Structural Insulated Sheathing and housewrap/OSB. The results are shown in Figures 3 and 4.

The wall temperature of the STYROFOAM SIS® Brand Structural Insulated Sheathing was also monitored during the two-year period. During the winter months, the indoor surface temperature was about 1°F warmer than the housewrap/OSB. The results are shown in Figures 5 and 6.

The higher wall temperatures for the wall assemblies featuring STYROFOAM SIS® Brand Sheathing were principally due to the high R-value of the rigid foam layer. Higher stud cavity temperature is the primary reason the assemblies using STYROFOAM SIS® Brand Sheathing had considerably lower moisture content. STYROFOAM SIS® Brand Insulated Sheathing outperformed housewrap/OSB sheathing in hot southern climates, too, insulated foam sheathing with high R-values.

Not only does insulated foam sheathing have an obvious energy savings advantage, it also elevates the temperature of the stud cavity in cold weather. Elevating the temperature inside the wall decreases condensation potential and increases drying potential to the inside of the building. Another cold climate comparison monitored moisture content inside the gypsum board during the same two-year period (Figure 6). Again, the wall systems with STYROFOAM SIS® Brand Structural Insulated Sheathing outperformed the wall system featuring housewrap/OSB. Walls using STYROFOAM SIS® Brand Sheathing had substantially lower moisture content in the gypsum board during the summer months which allows wood studs behind STYROFOAM SIS® Brand Sheathing to "live" in a drier environment, reducing the potential for mold and rotting.

WUFI® Results: Hot Climate Comparison

From Figures 5 and 6, it is evident that STYROFOAM SIS® Brand Structural Insulated Sheathing outperforms housewrap/OSB sheathing in hot southern climates. In this case, Houston (ASHRAE Climate Zone 3), the insulated foam sheathing kept the wall components in a dryer environment during the summer months. Another cold climate comparison monitored moisture content inside the gypsum board during the same two-year period (Figure 6). Again, the wall systems with STYROFOAM SIS® Brand Structural Insulated Sheathing outperformed the wall system featuring housewrap/OSB. Walls using STYROFOAM SIS® Brand Sheathing had substantially lower moisture content in the gypsum board during the summer months which allows wood studs behind STYROFOAM SIS® Brand Sheathing to "live" in a drier environment, reducing the potential for mold and rotting.
Figure 2: STYROFOAM SIS™ Brand Structural Insulated Sheathing Wall Assembly vs. Housewrap/OSB Wall Assembly

Methodology

Two residential wall systems were compared using the WUFI PRO version 3.3 heat and moisture analysis tool for building envelope construction. WUFI PRO is recognized as a highly advanced method of hygrothermal modeling by North American organizations such as ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) and NGB (National Green Building and Thermal Envelope Council). WUFI PRO modeling is well documented and has been validated by many comparisons between calculated and field performance data.

The wall systems compared were identical except for the sheathing materials. Two factors were the same for both wall systems. The time period modeled was two years, with a start date of October 1. Three sheathing materials were modeled, with all factors being the same for both wall systems. The time period modeled was two years, with a start date of October 1. Three sheathing materials were modeled 1/2” and 1” thick STYROFOAM SIS™ Brand Structural Insulated Sheathing and housewrap/OSB.

The results are shown in Figures 3 and 4.

Key inputs for the model were:
- Mean indoor relative humidity: 40 percent with an amplitude of 10 percent.
- Mean indoor temperature: 70°F with an amplitude of 1.8.
- Two coats of latex paint on drywall, 3 percent.
- No interior vapor retarder (e.g., polyethylene).
- 13-15 fiberglass batts, unbaked.
- Housewrap, 59 percent.
- OSB, < 1 perm.
- STYROFOAM SIS™ Brand Structural Insulated Sheathing is a multi-layer product: facer, foam and laminated fiber layer.
- Exterior STYROFOAM SIS™ Brand Sheathing facer, 0.3 perm.

WUFI Results: Cold Climate Comparison

A comparison of the two wall systems was made in the northern cold weather climate profile of Chicago (ASHRAE Climate Zone 5). Except for the sheathing materials, other factors were the same for both wall systems. The time period modeled was two years, with a start date of October 1. Three sheathing materials were modeled 1/2” and 1” thick STYROFOAM SIS™ Brand Structural Insulated Sheathing and housewrap/OSB during the entire two-year period by a wide margin. Housewrap/OSB did not keep the wall components nearly as dry. It is evident from Figure 3 that housewrap/OSB sheathing is much closer to the 20 percent threshold for potential mold growing conditions. Insulated foam sheathing demonstrates exceptional performance and is well under the 20 percent threshold.

The wall temperature of the dryline and sheathing was also monitored during the two-year period. During the winter months, the interior surface of 1” STYROFOAM SIS™ Brand Structural Insulated Sheathing and housewrap/OSB was as much as 14°F warmer than the housewrap/OSB interior surface and the 1/2” STYROFOAM SIS™ Brand Sheathing was as much as 7°F warmer.

The higher wall temperatures of the wall assemblies featuring STYROFOAM SIS™ Brand Insulated Sheathing are principally due to the high R-value of the rigid foam layer. Higher stud cavity temperatures are the primary reason the assemblies using STYROFOAM SIS™ Brand Insulated Sheathing had considerably lower moisture content.

Not only does insulated foam sheathing have an obvious energy savings advantage, it also elevates the temperature of the stud cavity in cold weather. Elevating the temperature inside the wall decreases condensation potential and increases drying potential to the inside of the building. Another cold climate monitored moisture content inside the gusset board during the same two-year period (Figure 6). Again, the wall systems with STYROFOAM SIS™ Brand Structural Insulated Sheathing outperformed the wall system featuring housewrap/OSB. Walls using STYROFOAM SIS™ Brand Insulated Sheathing had substantially lower moisture content in the gusset board during the summer months, which allows wood studs behind STYROFOAM SIS™ Brand Sheathing to “live” in a dryer environment, reducing the potential for mold and rotting.

WUFI Results: Hot Climate Comparison

From Figures 5 and 6, it is evident that STYROFOAM SIS™ Brand Structural Insulated Sheathing outperforms housewrap/OSB sheathing in hot southern climates, in this case Houston (ASHRAE Climate Zone 2). Housewrap/OSB sheathing kept the wall components under the 20 percent threshold for potential mold growing conditions. So in hot climates, too, insulated foam sheathing demonstrates exceptional performance and is well under the 20 percent threshold.

Figure 3 demonstrates that housewrap/OSB sheathing is much closer to the 20 percent threshold for potential mold growing conditions. So in hot climates, too, insulated foam sheathing demonstrates exceptional performance and is well under the 20 percent threshold.
Methodology

Two residential wall systems were compared using the WUFI® ORNL 3.5 software. Two climate scenarios, cold and hot, were modeled: one with housewrap and OSB sheathing vs. the other with STYROFOAM SIS™ Brand Structural Insulated Sheathing. The wall systems compared were identical except for the sheathing materials, all other factors were the same for both wall systems. The time period modeled was two years, with a start date of October 1. Three sheathing materials were modeled: 1-3/4" fiberglass batt, 1/2" Gypsum, and 1" Air Space. The assemblies featuring STYROFOAM SIS™ Brand Structural Insulated Sheathing have an obvious energy advantage compared to the assemblies featuring housewrap/OSB. Walls using STYROFOAM SIS™ Brand Structural Insulated Sheathing outperform the wall system featuring housewrap/OSB; Walls using STYROFOAM SIS™ Brand Structural Insulated Sheathing have a lower moisture content in the gypsum board during the summer months, which allows wood studs behind STYROFOAM SIS™ Brand Structural Insulated Sheathing to “live” in a drier wall environment, reducing the potential for mold and rotting.

WUFI® Results: Cold Climate Comparison

The higher wall temperatures with the wall assemblies featuring STYROFOAM SIS™ Brand Structural Insulated Sheathing are principally due to the high R-value of the rigid foam layer. Higher stud cavity temperatures drier during the two-year period. During the winter months, the interior surface of 1" STYROFOAM SIS™ Brand Structural Insulated Sheathing was as much as 14°F warmer, and the gypsum board during the winter months, which allows wood studs behind STYROFOAM SIS™ Brand Structural Insulated Sheathing to “live” in a drier wall environment, reducing the potential for mold and rotting.

WUFI® Results: Hot Climate Comparison

Not only does insulated foam sheathing have an obvious energy savings advantage, it also elevates the temperature of the stud cavity in cold weather. Elevating the temperature inside the wall decreases condensation potential and increases drying potential to the inside of the building. Another cold climate monitored moisture content inside the gypsum board during the same two-year period (Figure 5). The wall systems with STYROFOAM SIS™ Brand Structural Insulated Sheathing outperformed the wall system featuring housewrap/OSB; Walls using STYROFOAM SIS™ Brand Structural Insulated Sheathing had substantially lower moisture content in the gypsum board during the summer months, which allows wood studs behind STYROFOAM SIS™ Brand Structural Insulated Sheathing to “live” in a drier wall environment, reducing the potential for mold and rotting.

Figure 3 compares the moisture content within the actual sheathing material of each wall assembly. For STYROFOAM SIS™ Brand Structural Insulated Sheathing, the moisture content is monitored inside the laminated fiber portion only. For the house- wrap/OSB sheathing, the moisture content is monitored inside the OSB portion only. The laminated fiber and OSB are both wood-based materials that face the interior side of the stud cavity in their respective wall systems. This location is the most critical portion of the wall to compare because condensation is most likely to occur here, especially during winter months. The two peaks in the moisture content data shown in Figure 3 occurred during winter months when temperatures were coldest. STYROFOAM SIS™ Brand Structural Insulated Sheathing had exceptional performance not only in the winter months, but it exceeded the moisture protection performance of housewrap/OSB during the entire two-year period by a wide margin. Housewrap/OSB did not keep the wall components nearly as dry. It is evident from Figure 3 that housewrap/OSB sheathing is much closer to the 20 percent threshold for potential mold growing conditions. Insulated foam sheathing demonstrates exceptional performance and is well under the 20 percent threshold.

Figure 5 demonstrates that housewrap/OSB sheathing is much closer to the 20 percent threshold for potential mold growing conditions. So in hot climates, too, insulated foam sheathing demonstrates superior performance and is well under the 20 percent threshold.

Not only does insulated foam sheathing have an obvious energy savings advantage, it also elevates the temperature of the stud cavity in cold weather. Elevating the temperature inside the wall decreases condensation potential and increases drying potential to the inside of the building. Another cold climate monitored moisture content inside the gypsum board during the same two-year period (Figure 5). The wall systems with STYROFOAM SIS™ Brand Structural Insulated Sheathing outperformed the wall system featuring housewrap/OSB; Walls using STYROFOAM SIS™ Brand Structural Insulated Sheathing had substantially lower moisture content in the gypsum board during the summer months, which allows wood studs behind STYROFOAM SIS™ Brand Structural Insulated Sheathing to “live” in a drier wall environment, reducing the potential for mold and rotting.

WUFI® Results: Hot Climate Comparison

From Figures 3 and 4, it is evident that STYROFOAM SIS™ Brand Structural Insulated Sheathing outperforms house- wrap/OSB sheathing in hot southern climates. In the case Houston (ASHRAE Climate Zone 3), the insulated foam sheathing kept the wall compo- nents dry during the two-year period.

WUFI® Results: Cold Climate Comparison

The wall systems compared featured STYROFOAM SIS™ Brand Structural Insulated Sheathing and housewrap/OSB. Walls using STYROFOAM SIS™ Brand Structural Insulated Sheathing had substantially lower moisture content in the gypsum board during the summer months, which allows wood studs behind STYROFOAM SIS™ Brand Structural Insulated Sheathing to “live” in a drier wall environment, reducing the potential for mold and rotting.

WUFI® Results: Cold Climate Comparison

The wall temperature of the dry wall assemblies was also monitored during the two-year period. During the winter months, the interior surface of 1" STYROFOAM SIS™ Brand Structural Insulated Sheathing was as much as 14°F warmer than the housewrap/OSB Interior surface and the 1/2" STYROFOAM SIS™ Brand Sheathing was as much as 7°F warmer.

WUFI® Results: Cold Climate Comparison

The wall temperature of the dry wall assemblies was also monitored during the two-year period. During the winter months, the interior surface of 1" STYROFOAM SIS™ Brand Structural Insulated Sheathing was as much as 14°F warmer than the housewrap/OSB Interior surface and the 1/2" STYROFOAM SIS™ Brand Sheathing was as much as 7°F warmer.

STYROFOAM SIS™ Brand Structural Insulated Sheathing Wall Assembly vs. Housewrap/OSB Wall Assembly

A comparison of the two wall systems was made in the northern cold weather climate profile of Chicago (ASHRAE Climate Zone 5). Except for the sheathing materials, all other factors were the same for both wall systems. The time period modeled was two years, with a start date of October 1. Three sheathing materials were modeled: 1-3/4" fiberglass batt, 1/2" Gypsum, and 1" Air Space. The assemblies featuring STYROFOAM SIS™ Brand Structural Insulated Sheathing have an obvious energy advantage compared to the assemblies featuring housewrap/OSB. Walls using STYROFOAM SIS™ Brand Structural Insulated Sheathing outperform the wall system featuring housewrap/OSB; Walls using STYROFOAM SIS™ Brand Structural Insulated Sheathing had substantially lower moisture content in the gypsum board during the summer months, which allows wood studs behind STYROFOAM SIS™ Brand Structural Insulated Sheathing to “live” in a drier wall environment, reducing the potential for mold and rotting.

WUFI® Results: Cold Climate Comparison

From Figures 3 and 4, it is evident that STYROFOAM SIS™ Brand Structural Insulated Sheathing outperforms house- wrap/OSB sheathing in hot southern climates. In the case Houston (ASHRAE Climate Zone 3), the insulated foam sheathing kept the wall compo- nents dry during the two-year period.
Insulated sheathing provides exceptional moisture protection in residential walls versus traditional span-bounded plywood sheath with oriented strand board (OSB) sheathing. Increasing stud cavity temperature is critical to managing the potential for condensation within the lightweight framed wall design. The high R-value of exterior wall insulation increases stud cavity temperature, creating greater moisture protection advantage over other non-insulated sheathing materials. The moisture content was analyzed in two types of wall assemblies—an assembly using STYROFOAM® Brand Structural Insulated Sheathing and one using housewrap and OSB. Testing was performed in both hot and cold climate scenarios. Neither of the wall assemblies experienced moisture content greater than 20 percent, which is the generally accepted threshold for potential mold growth conditions with wood-based products. The analyses contained in this document demonstrate structural insulated sheathing does result in better moisture protection in both hot and cold climates.

The Core of Moisture Protection

The substantial energy savings advantage of continuous insulated foam sheathing in residential walls is well known. However, does insulated sheathing offer greater moisture protection than housewrap and OSB? What impact does insulated sheathing have on condensation potential inside the stud cavity? Further, is the perm of sheathing material the most important factor to consider for condensation protection inside the wall cavity? Does the sheathing’s perm contribute to mold growth risk? Why is it so important to adjust our expectations for condensation potential inside the wall cavity? Is mold growth within the wall cavity potentially harmful? What are the benefits of using a building paper or a housewrap with insulation? Are there better options for sheathing to manage moisture and mold in walls?

Insulated sheathing provides greater moisture protection than traditional sheathing systems. In addition, it is easier to install and reduces unnecessary waste in the long run. Insulated sheathing also provides a higher R-value, which means it is more energy-efficient. When it comes to mold growth, insulated sheathing can help prevent mold by reducing the potential for moisture accumulation. Insulated sheathing is also more resistant to mold growth, which can help extend the lifespan of your building. Overall, insulated sheathing is a great choice for those looking to improve the energy efficiency and durability of their home.

Insulated sheathing is a popular choice for homeowners looking to improve the energy efficiency of their homes. However, it is important to note that insulated sheathing is not a one-size-fits-all solution. Each home and location is unique, and it is important to consult with a professional to determine the best option for your specific needs. Insulated sheathing provides a number of benefits, including improved energy efficiency, reduced noise, and improved moisture protection. However, it is important to consider the potential drawbacks, such as increased cost and complexity of installation. Overall, insulated sheathing is a great option for those looking to improve the energy efficiency and durability of their homes.
Insulated Sheathing provides exceptional moisture management in residential walls versus traditional span-bonded polyisocyanurate housewrap with oriented strand board (OSB) sheathing. Increasing stud cavity temperature is critical to managing the potential for condensation within a typical laminated wall design.

The high-R-value of exterior wall insulation increases stud cavity temperature, creating condensation protection advantage over non-insulated sheathing materials. The moisture content was analyzed in two types of wall assemblies—an assembly using STYROFOAM™ Brand Structural Insulated Sheathing and one using housewrap and OSB. Testing was performed in both hot and cold climate scenarios. Neither of the wall assemblies experienced moisture content greater than 20 percent, which is the generally accepted threshold for potential mold growth conditions with wood-based products. The analyses contained in this document on structural insulated sheathing do result in superior moisture management in sheathing both in hot and cold climates.

**Summary**

Insulated sheathing provides exceptional moisture management in residential walls versus traditional span-bonded polyisocyanurate housewrap with oriented strand board (OSB) sheathing. Increasing stud cavity temperature is critical to managing the potential for condensation within a typical laminated wall design. The high-R-value of exterior wall insulation increases stud cavity temperature, creating condensation protection advantage over non-insulated sheathing materials. The moisture content was analyzed in two types of wall assemblies—an assembly using STYROFOAM™ Brand Structural Insulated Sheathing and one using housewrap and OSB. Testing was performed in both hot and cold climate scenarios. Neither of the wall assemblies experienced moisture content greater than 20 percent, which is the generally accepted threshold for potential mold growth conditions with wood-based products. The analyses contained in this document on structural insulated sheathing do result in superior moisture management in sheathing both in hot and cold climates.

**Significance of Perm**

Housewrap, at 56 perms, is generally considered an adequate moisture barrier to manage moisture in residential walls. A common practice in the residential building industry is that high-perm housewrap makes the wall more "breathable," leading to better performance than low-perm insulated sheathing. Yet the comparison data presented here clearly indicate that this is not the case. Why didn't the high-perm housewrap perform as well as the low-perm insulated sheathing in the analysis? The housewrap's perm was not a high factor since the OSB has such a low perm. Furthermore, the high perm does not help the wall system dry out since the housewrap determines the rate of water vapor diffusion to the outside. Both the housewrap and the OSB have very low perm-values and do not have the ability to raise the temperature of the wall cavity to the same level of performance as can be achieved with insulated sheathing.

**Third-party Agreement**

The following building scientists and researchers recognize the moisture protection advantage of insulated sheathing in wall construction:

- Lower condensation potential in the lower part of the wall cavity.
- Higher drying potential to the interior of the wall cavity.
- Warmer stud cavity temperature, creating a condition most favorable to mold growth.
- Moisture management in residential walls.

**Insulated Sheathing**

Insulated sheathing provides exceptional moisture management in residential walls versus traditional span-bonded polyisocyanurate housewrap with oriented strand board (OSB) sheathing. Increasing stud cavity temperature is critical to managing the potential for condensation within a typical laminated wall design. The high-R-value of exterior wall insulation increases stud cavity temperature, creating condensation protection advantage over non-insulated sheathing materials.

The moisture content was analyzed in two types of wall assemblies—an assembly using STYROFOAM™ Brand Structural Insulated Sheathing and one using housewrap and OSB. Testing was performed in both hot and cold climate scenarios. Neither of the wall assemblies experienced moisture content greater than 20 percent, which is the generally accepted threshold for potential mold growth conditions with wood-based products. The analyses contained in this document on structural insulated sheathing do result in superior moisture management in sheathing both in hot and cold climates.