ThermoCon Spray-On System/CSI 07210

ThermoCon is a complete spray-on system consisting of specially milled cellulose fibers treated with fire retardant chemicals, high performance adhesive and proven application methods.

ThermoCon is applied by a national and international network of trained applicators using approved equipment and spray methods.

ThermoCon provides a monolithic coating that is tough with an attractive carpet-like texture that follows the contour of the architect's design to provide exceptional noise reduction, condensation control, and outstanding thermal control in one application. ThermoCon outperforms prefabricated insulation products because it is spray applied, eliminating voids and compression areas that reduce thermal efficiency.

ThermoCon can be applied to virtually any properly prepared surface. Typical applications are sprayed on wood, steel, concrete, gypsum board, brick, glass, plaster, sprayed and rigid board polyurethane foam and other foam insulation.

ThermoCon is available in six colors; White, Beige, Light Grey, Dark Grey, Tan and Black. Specially matched custom colors are also available.

ThermoCon has been tested under the following ASTM Standard Tests and other laboratory tests listed in this catalog:

- ASTM E 605 Thickness & Density of Sprayed Fire-Resistive Materials
- ASTM E 119 Fire Test of Building Construction Materials
- ASTM E 736 Cohesion/Adhesion of Sprayed Fire-Resistive Materials
- ASTM E 759 Effect of Deflection of Fire Resistant Materials
- ASTM E 90 Laboratory Measurements of Airborne Sound Transmissions Loss of Building Partitions
- ASTM C 1149-90 Self-Supported Spray Applied Cellulose Thermal/Acoustic Insulation Type I & Type II
- ASTM C 739 Cellulose Fiber Loose Fill Thermal Insulation
- ASTM E 423 Sound Absorption Coefficients
- ASTM E 413 Classification For Rating Sound Insulation
- ASTM C 523 Light Reflectance of Acoustical Materials
- ASTM E 1042 Classification of Acoustically Absorbent Materials
- ASTM C 518 Thermal Transmission Properties
- ASTM E 84 Surface Burning Characteristics of Building Materials
- ASTM E 859 Air Erosion of Sprayed Fire-Resistive Materials

Typical Projects

- Schools
- Gymnasiums
- Auditoriums
- Churches
- Hotels
- Libraries
- Detention Centers
- Parking Garages
- Office Buildings
- Theaters
- Convention Centers
- Television Studios
- Restaurants
- Apartment Buildings
- Shopping Malls
- Warehouses
- Airports
- Condominiums
- Climate Controlled Storage Facilities
- Pre-Engineered Metal Buildings for Various Uses
ThermoCon provides superior thermal resistance by creating a monolithic seal with the use of hollow interlaced fibers sprayed in place with no seams or voids. Our seamless application provides an R-Value of 3.7 per inch and is a significant barrier to air infiltration, convection and radiation in both hot and cold environments, thereby reducing heating and cooling costs.

ThermoCon has the ability to absorb sound instead of reflecting it thereby reducing the reverberation time. A one inch application of ThermoCon will absorb up to 75% of the sound caused by the reverberations from hard surfaces such as walls, ceilings and floors. ThermoCon is effective over a broad range of frequencies at varied thickness. Acoustical consultants and architects know that unwanted noise affects comfort, concentration and behavior. Buildings insulated with ThermoCon are quieter, creating a more relaxed atmosphere for the occupants.

ThermoCon Sprayed Thermal & Acoustical Insulation has been tested by a NA VLAP accredited laboratory that is code accepted and found to be suitable as an approved thermal barrier over sprayed polyurethane foam, rigid polyurethane foam and other plastic insulation materials.

<table>
<thead>
<tr>
<th>Depth</th>
<th>125 HZ</th>
<th>250 HZ</th>
<th>500 HZ</th>
<th>1000 HZ</th>
<th>2000 HZ</th>
<th>4000 HZ</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>0.04</td>
<td>0.15</td>
<td>0.40</td>
<td>0.73</td>
<td>0.80</td>
<td>0.82</td>
<td>.50</td>
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<td>3/4&quot;</td>
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<td>0.20</td>
<td>0.53</td>
<td>0.83</td>
<td>0.89</td>
<td>0.94</td>
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<tr>
<td>1&quot;</td>
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<td>0.29</td>
<td>0.70</td>
<td>0.98</td>
<td>1.01</td>
<td>0.98</td>
<td>.75</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>0.19</td>
<td>0.51</td>
<td>0.88</td>
<td>1.06</td>
<td>1.08</td>
<td>1.00</td>
<td>.90</td>
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<tr>
<td>2&quot;</td>
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<td>0.64</td>
<td>0.98</td>
<td>1.10</td>
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<td>0.98</td>
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<td>1.00</td>
</tr>
<tr>
<td>3&quot;</td>
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<td>0.99</td>
<td>1.03</td>
<td>1.02</td>
<td>1.02</td>
<td>1.01</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Some values interpolated.

Based on the above physical properties, ThermoCon is in compliance with the requirements of the insulation section of CABO Model Energy Code, BOCA, ICBO and SBCCI Building Codes.
**Product Description**

Tex-Ceil is a spray applied acoustical treatment that provides a coating that is attractive, is unaffected by normal temperature and humidity levels, will withstand minor abrasion abuse and is a Class I building material. Tex-Ceil may be applied to most surfaces that require excellent acoustical values along with an attractive appearance typically needed on projects such as churches, schools, auditoriums, detention facilities, retail sales areas, and many others.

Choose ThermoCon Tex-Ceil when you require a durable textured seamless finish for interior applications in new or existing buildings. Tex-Ceil with fire resistive fiber and ThermoBond adhesive provides a cost effective noise reduction coating while providing a finish with beauty and durability. Tex-Ceil is available in white, black and specially matched custom colors. Tex-Ceil can be applied to most substrates such as gypsum board, wood, concrete, metal and plaster. Most surfaces require priming with a sealer/stain blocker.

Tex-Ceil can be applied at various thickness to achieve high noise reduction coefficients from .65 to .90 while providing excellent light reflectivity for any environment.

Tex-Ceil is an economical alternative to materials such as acoustical plaster, suspended acoustical ceilings, acoustical tile, paint and other unidimensional products. If a tougher more abrasion resistant finish is required, ThermoTuff Over-Spray may be applied to further improve Tex-Ceil's durability.

**Features**

- Attractive seamless textured finish
- Applicable to virtually any substrate
- Conforms to any surface configuration
- Provides superior acoustical values
- Durable surface
- High level of light reflectivity
- Suitable for new or existing projects
- Impact and abrasion resistant without cracking

**Typical Installation**

Offices, churches, schools, detention facilities, restaurants, cafeterias, libraries, gymnasiums, auditoriums, theaters, airports, TV studios and many more.

**Acoustical Performance**

ThermoCon Tex-Ceil has been tested by a NAVLAP code accepted acoustical testing agency and found to provide exceptional noise reduction coefficients. A typical application of 1/2" of Tex-Ceil provides an NRC of .65.

**Sound Absorption Characteristics**

Reference ASTM C423 On Solid Backing

<table>
<thead>
<tr>
<th>Depth</th>
<th>125 HZ</th>
<th>250HZ</th>
<th>500HZ</th>
<th>1000HZ</th>
<th>2000HZ</th>
<th>4000HZ</th>
<th>NRC</th>
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<tbody>
<tr>
<td>1/2&quot;</td>
<td>0.09</td>
<td>0.17</td>
<td>0.48</td>
<td>0.88</td>
<td>1.08</td>
<td>1.13</td>
<td>.65</td>
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<tr>
<td>5/8&quot;</td>
<td>0.01</td>
<td>0.21</td>
<td>0.60</td>
<td>0.99</td>
<td>1.05</td>
<td>1.06</td>
<td>.70</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>0.16</td>
<td>0.26</td>
<td>0.67</td>
<td>1.03</td>
<td>1.12</td>
<td>1.13</td>
<td>.75</td>
</tr>
<tr>
<td>1&quot;</td>
<td>0.12</td>
<td>0.38</td>
<td>0.89</td>
<td>1.18</td>
<td>1.16</td>
<td>1.16</td>
<td>.90</td>
</tr>
</tbody>
</table>

*Some values interpolated.

**ASTM Standards & Specifications/Tex-Ceil**

<table>
<thead>
<tr>
<th>ASTM E 84/UL 723</th>
<th>Flame Spread</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM E 844/ UL 723</td>
<td>Smoke Developed</td>
<td>0</td>
</tr>
<tr>
<td>ASTM E 736</td>
<td>Bond Strength</td>
<td>900 psi</td>
</tr>
<tr>
<td>ASTM E 761</td>
<td>Compression Strength</td>
<td>1200 psi</td>
</tr>
<tr>
<td>ASTM C 523</td>
<td>Reflectivity</td>
<td>81 %</td>
</tr>
</tbody>
</table>
ThermoForm Cellulose Insulation System

**Product Description**
ThermoForm Cellulose Insulation is a field proven advanced insulation system designed for use in wall cavity, attic and between floor applications. ThermoForm is formulated from cellulose fibers and treated in a fire resistant process to produce a product with lasting thermal performance and reassuring safety properties.

With a self-contained dry adhesive ThermoForm is specifically designed to completely occupy and insulate wall and attic voids by forming a unique structure conforming seamless blanket to significantly reduce sound transmission and virtually eliminates air infiltration.

**Sound Transmission Control**
ThermoForm is a field proven noise control insulation, absorbing substantial levels of unwanted sound. The sprayed-in-place ThermoForm blanket creates a sound deadening wall as it seals off potential sound transmission openings. Voids around pipes and wiring are also eliminated. ThermoForm’s natural high density provides an excellent STC rating. Higher STC values equate to less noise transmitted through the wall and attic.

**Air Infiltration Control**
High R-Values equate to favorable insulation performance, but performance can be drastically reduced by air infiltration. Air infiltration is the costly uncontrolled leakage of air penetrating both in and out of a structure, infiltrating both heating and cooling costs. ThermoForm resolves the problem of air infiltration by blocking this uncontrolled leakage.

**Control of Heat Loss/Gain**
ThermoForm possesses greater density when compared to fiberglass batts and therefore has the ability to virtually eliminate air infiltration. An improperly installed fiberglass batt with as little as 4% void area translates into as much as a 50% increase in heat loss/gain through infiltration, resulting in excessive energy expenditures. In contrast, ThermoForm completely fills all voids and seals around conduit, pipe, and electrical boxes, thus eliminating these energy loss channels.

**Typical Installation**
Perimeter walls, partition walls and attics using metal or wood framing in almost any commercial or residential application such as hotels, condominiums, apartment houses, offices, hospitals, single family dwellings and many more.

**Approvals, Specifications & Physical Properties/CSI 07210**
ThermoForm Cellulose Insulation as tested by independent laboratories complies with: CPSC Safety Act of 1978, PL. 95-319, ASTM C 739, HUD Use of Materials Bulletin # 80, HH 1 515D, FHA, VA.

ThermoForm Cellulose Insulation also complies with the requirements of the insulation section of: CABO Model Energy Code, BOCA, ICBO, and SBCCI building codes.

ThermoForm Cellulose Insulation has been tested in accordance with ASTM C 1149-90, Type II, materials containing a dry adhesive that is activated by water during installation and intended only for enclosed or covered applications.

**Steel Stud Wall Assemblies**

<table>
<thead>
<tr>
<th>STC</th>
<th>Construction Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>49</td>
<td>2 1/2&quot; steel studs, 24&quot; OC, 1 + 1 layers of 5/8&quot; gypsum board</td>
</tr>
<tr>
<td>58</td>
<td>2 1/2&quot; steel studs, 24&quot; OC, 2 + 2 layers of 5/8&quot; gypsum board</td>
</tr>
<tr>
<td>49</td>
<td>3 5/8&quot; steel studs, 24&quot; OC, 1 + 1 layers of 5/8&quot; gypsum board</td>
</tr>
<tr>
<td>52</td>
<td>3 5/8&quot; steel studs, 24&quot; OC, 2 + 1 layers of 5/8&quot; gypsum board</td>
</tr>
<tr>
<td>54</td>
<td>3 5/8&quot; steel studs, 24&quot; OC, 2 + 2 layers of 5/8&quot; gypsum board</td>
</tr>
</tbody>
</table>

Increasing the thickness of the ThermoForm Cellulose Insulation application by 1/2" will add a calculated average of 4.5 db to each STC rating shown in the charts. STC db ratings shown are from actual and calculated test data.

**Wood Stud Wall Assemblies**

<table>
<thead>
<tr>
<th>STC</th>
<th>Construction Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>2&quot; x 4&quot; plate, 2&quot; x 4&quot; wood studs, 16 OC, 1 + 1 layers of 1/2&quot; gypsum board</td>
</tr>
<tr>
<td>47</td>
<td>2&quot; x 4&quot; plate, 2&quot; x 4&quot; wood studs, 24&quot; OC, 2 + 2 layers of 5/8&quot; type X gypsum board</td>
</tr>
<tr>
<td>52</td>
<td>2&quot; x 4&quot; plate, 2&quot; x 4&quot; staggered wood studs, 16 OC, 1 + 1 layers of 5/8&quot; gypsum board</td>
</tr>
<tr>
<td>55</td>
<td>2&quot; x 4&quot; plate, 2&quot; x 4&quot; staggered wood studs, 16 OC, 2 + 2 layers of 5/8&quot; gypsum board</td>
</tr>
<tr>
<td>57</td>
<td>2&quot; x 4&quot; plate, 2&quot; x 4&quot; staggered wood studs, 16 OC, 2 + 2 layers of 5/8&quot; gypsum board</td>
</tr>
</tbody>
</table>

**Fire Wall Test:** ASTM E 119 Accept赜 for use in fire rated assemblies.  
**Gross Calorific Value of Solid Fuel:** ASTM D 2015, 785  
**Aging:** ASTM D 1499 Five Years no change  
**Noise Reduction:** ASTM C 423 NRC .75  
**Corrosiveness:** ASTM C 739, ASTM C 1149  
**Starch:** ASTM D 9911 None  
**Soundwall Test:** ASTM E 90, ASTM C 423  
**Surface Burning Characteristics:** ASTM E 84, Flame 15, Smoke 0  
**Thermal Efficiency Test:** ASTM C 518, R-Value 3.8 per inch.  
**Resistant to Vermesite** Report # 8499-3  
**Underwriters Laboratories:** Reference # R-9408, Flame 15, Smoke 0