Mass Timber Construction
ARCHITECTURAL DETAILS
Nordic Structures is the leading innovator in mass timber construction. Its resource comes from responsibly managed lands within the regional boreal forest. Vertical integration, from forest to structure, bolstered by Nordic's experienced design and development team, ensures consistent quality and unparalleled level of service.

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## EXTERIOR WALL

## PARTITION

## FLOOR

## ROOF
**1.0 General**

1.1 This document supersedes all previous versions. For the latest version, consult nordic.ca or contact Nordic Structures.

1.2 The information contained in this document is provided for information purposes only. This information should not be used for any application without examination and verification of its accuracy, suitability and applicability by a licensed engineer, architect or other professional. Nordic Structures does not guarantee that the information is suitable for any general or particular use, and assumes no responsibility for the use, application of and / or reference to the information.

1.3 Certain commercial products are identified in this document in order to properly represent the test procedure. In no case does such identification imply recommendations or endorsement by Nordic Structures, nor does it imply that the product or material identified is the best available for the purpose.

1.4 For more information, consult nordic.ca or contact Nordic Structures.

**2.0 Fire Safety**

2.1 The fire resistance rating (FRR) is determined using the design methodology specified in the National Design Specification (NDS) for Wood Construction 2015. The fire resistance rating may also be determined on the basis of the results of tests conducted in conformance with ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials.

2.2 To determine the fire resistance of an element or assembly according to other assumptions than those specified in this document, consult the Nordic X-Lam technical guide or use Nordic Sizer software.

2.3 The fire performance criteria for evaluating the separating function of building elements shall be considered when required by the applicable building code.

2.4 For this purpose, among other requirements, many firestop systems suitable for mass timber are available. For more details, consult the product suppliers.

2.5 Additional references: Fire-Resistance-Tested Mass Timber Assemblies and Penetrations.
3.0 Envelope

3.1 Good thermal insulation is never arbitrary and must always be chosen according to location, area and climate.

3.2 The total thermal resistance of an assembly is calculated according to the values of thermal conductivity, λ, and thermal resistance, R, indicated in the following table.

3.3 To convert the thermal resistance of the International System (RSI) [m²K/W] to the R-value [ft²Fh/BTU], divide the RSI value by 0.1761.

3.4 As stated in technical note NS-NT602-US, Nordic X-Lam cross-laminated timber acts as a vapor barrier.

3.5 The use of closed cell spray polyurethane is not recommended for exterior wall assemblies made of cross-laminated timber because of its low permeability.

3.6 The study of the building envelope, including the control of condensation, the transfers of heat, air, moisture and sound, as well as the details of joining and fixing of the coverings, shall be carried out in accordance with the applicable building code.

### Thermal Resistance of Materials

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4.0 Acoustics

4.1 The Sound Transmission Class (STC) rating describes the performance of the separating wall or floor/ceiling assembly, whereas the Field Sound Transmission Class (FSTC) takes into consideration the performance of the separating element as well as the flanking transmission paths. Also, building professionals should ensure that floors are designed to minimize impact transmission. For more details, see the IBC 2018, Section 1206.

4.2 The following pages present separating assemblies that may comply with the applicable building code. However, selecting an appropriate separating assembly is only one part of the solution for reducing airborne sound transmission between adjoining spaces: to fully address the sound performance of the whole system, flanking assemblies must be connected to the separating assembly. For more details, see the Nordic X-Lam Technical Guide.

4.3 Unless otherwise noted, concrete topping and prefabricated concrete topping used in assemblies have a density of 2710 kg/m$^3$.

4.4 The use of prefabricated concrete topping in floor assemblies is only required by the acoustical testing procedure.

4.5 The use of an acoustic membrane under a floor covering is recommended, especially when it is a hard surface coating (e.g. ceramic).

4.6 Unless otherwise noted, the acoustic performance values are derived from test results from a certified laboratory. Test reports are available upon request.

4.7 Additional references:
- Acoustics and Mass Timber: Room-to-Room Noise Control
- Acoustically-Tested Mass Timber Assemblies
- Acoustic Lab Testing of Typical Multi-Family Residential Wall and Floor Assemblies
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<td>NS-DA2238</td>
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<td>3.38</td>
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<td>n.a. n.a.</td>
<td>65 n.a. 62 n.a.</td>
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<td>2020-02-01</td>
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### Roof

<table>
<thead>
<tr>
<th>Detail</th>
<th>Product</th>
<th>Fire-resistance rating</th>
<th>Thermal resistance</th>
<th>Acoustic ratings</th>
<th>Drawing</th>
<th>Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
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<td>1.0 h</td>
<td>7.9</td>
<td>45</td>
<td>n.a.</td>
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<td>n.a.</td>
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<td>45</td>
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<td>n.a.</td>
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<td>2.0 h</td>
<td>7.7</td>
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<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td>R8</td>
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<td>1.5 h</td>
<td>7.5</td>
<td>43</td>
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<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td>R9</td>
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<td>2.0 h</td>
<td>7.7</td>
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<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
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</table>
NORDIC X-LAM CROSS-LAMINATED TIMBER

Nordic X-Lam cross-laminated timber is made of at least three orthogonal layers of graded sawn lumber that are laminated by gluing with structural adhesives.

SLABS AND PANELS

Layup combinations
89-3s, 105-3s, 143-5s, 175-5s, 197-7s, 213-7l, 244-7s, 244-7l and 267-9l

Maximum sizes
2.70 × 19.5 m (106-1/4 in. × 64 ft)

Stress grade
E1 (L 1950Fb and T No. 3/Stud)
GLULAM

NORDIC LAM+
GLUED-LAMINATED TIMBER

Nordic Lam+ glued-laminated timber of architectural appearance classification consists of small wood laminations bonded together in parallel using structural adhesives.

BEAMS AND COLUMNS

Widths*
38, 86, 137, 184, 215, 241, 292, 346, 395, 448, 502, 552 and 603 mm

Depths*
From 67 to 2435 mm
(2-5/8 to 95-7/8 in.)

Lengths*
Up to 24.4 m (80 ft)

Stress grade
24F-ES/NPG

* Larger sizes available upon request

DECKING

Thicknesses*
38, 44, 54 and 89 mm
(1-1/2, 1-3/4, 2-1/8 and 3-1/2 in.)

Widths
203, 305 and 406 mm
(8, 12 and 16 in.)

Lengths
Up to 18.9 m (62 ft)

Stress grades
ES11, except 89 mm thickness in 20F-ES/CPG

* Larger sizes available upon request
EXTERIOR WALL
### Exterior Wall

**Title:** Exterior Wall  
**Category:** Architecture, Assembly  
**Drawing:** NS-DA2000-US  
**Scale:** 1:10  
**Date:** 2020-02-01  
**Page:** 1.1

<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR $^{(a)}$</th>
<th>1 h</th>
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<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>6.7 / 38</td>
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#### Acoustic ratings

- STC / FSTC
- IIC / FIIC

n.a. / n.a.

---

#### Description:

- **Cladding (up to the designer):**
- **Air Gap:** 3/4 in.
- **Wood Studs:** 2 in. x 4 in. @ 24 in. O.C.
- **Wood Furring:** 2 in. x 4 in. @ 24 in. O.C.
- **2 Rows of Stone Wool Insulation:** 3-1/2 in. EA.
- **Air Barrier Membrane**
- **Nordic X-Lam:** 4-1/8 in.
- **Wood Studs:** 2 in. x 4 in. @ 24 in. O.C.
- **1 Row of Stone Wool Insulation:** 3-1/2 in.
- **1 Type X Gypsum Board:** 5/8 in.

---

*a* The fire-resistance rating is based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.
Fire-resistance rating | FRR (a) | 30 min
---|---|---
Thermal resistance | RSI / R | 4.8 / 27
Acoustic ratings | STC / FSTC | n.a. / n.a.
IIC / FIIC | n.a. / n.a.

(a) The fire-resistance rating is based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- CLADDING (UP TO THE DESIGNER)
- AIR GAP 3/4 in.
- WOOD STUDS 2 in. X 4 in. @ 24 in. O.C.
- WOOD FURRING 2 in. X 4 in. @ 24 in. O.C.
- 2 ROWS OF STONE WOOL INSULATION 3-1/2 in. EA.
- AIR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.
Fire-resistance rating  | FRR (a)  | 1 h  
---|---|---
Thermal resistance  | RSI / R  | 5.0 / 28  
Acoustic ratings  | STC / FSTC  | n.a. / n.a.  
IIC / FIIC  | n.a. / n.a.  

(a) The fire-resistance rating is based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- CLADDING (UP TO THE DESIGNER)
- AIR GAP 3/4 in.
- WOOD STUDS 2 in. X 4 in. @ 24 in. O.C.
- WOOD FURRING 2 in. X 4 in. @ 24 in. O.C.
- 2 ROWS OF STONE WOOL INSULATION 3-1/2 in. EA.
- AIR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.
- WOOD FURRING 3/4 in. @ 24 in. O.C.
- 1 TYPE X GYPSUM BOARD 5/8 in.
**Exterior Wall**

<table>
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<th>Fire-resistance rating</th>
<th>FRR (a)</th>
<th>30 min</th>
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<td>n.a. / n.a.</td>
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(a) The fire-resistance rating is based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- CLADDING (UP TO THE DESIGNER)
- AIR GAP 3/4 in.
- WOOD STUDS 2 in. X 3 in. @ 24 in. O.C.
- WOOD FURRING 2 in. X 3 in. @ 24 in. O.C.
- 2 ROWS OF STONE WOOL INSULATION 2-1/2 in. EA.
- AIR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.
**Exterior Wall**

- **CLADDING (UP TO THE DESIGNER)**
- **AIR GAP 3/4 in.**
- **WOOD STUDS 2 in. X 3 in. @ 24 in. O.C.**
- **WOOD FURRING 2 in. X 3 in. @ 24 in. O.C.**
- **2 ROWS OF STONE WOOL INSULATION 2-1/2 in. EA.**
- **AIR BARRIER MEMBRANE**
- **NORDIC X-LAM 4-1/8 in.**
- **WOOD FURRING 3/4 in. @ 24 in. O.C.**
- **1 TYPE X GYPSUM BOARD 5/8 in.**

**Fire-resistance rating**

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<th>FRR (a)</th>
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**Thermal resistance**

| RSI / R | 4.0 / 22 |

**Acoustic ratings**

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<td>n.a. / n.a.</td>
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(a) The fire-resistance rating is based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.
**Fire-resistance rating**

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**Thermal resistance**

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**Acoustic ratings**

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</table>

(a) The fire-resistance rating is based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- CLADDING (UP TO THE DESIGNER)
- AIR GAP 3/4 in.
- WOOD STUDS 2 in. X 4 in. @ 24 in. O.C.
- 1 ROW OF STONE WOOL INSULATION 3-1/2 in.
- AIR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.
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<th>Specification</th>
<th>Notes</th>
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<td><strong>CLADDING (UP TO THE DESIGNER)</strong></td>
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<td>Air Gap</td>
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<td>2 in. X 4 in. @ 24 in. O.C.</td>
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<tr>
<td>1 Row of Stone Wool Insulation</td>
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<tr>
<td>Air Barrier Membrane</td>
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<td>Wood Furring</td>
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**Title**: Exterior Wall

**Category**: Architecture, Assembly

**Drawing**: NS-DA2006-US

**Scale**: 1:10

**Date**: 2020-02-01

**Page**: 1.7
8-3/8 in. VAR

<table>
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<td>n.a. / n.a.</td>
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</tbody>
</table>

(a) The fire-resistance rating is based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- CLADDING (UP TO THE DESIGNER)
- AIR GAP 3/4 in.
- WOOD STUDS 2 in. X 4 in. @ 24 in. O.C.
- SPRAYED POLYURETHANE FOAM 3-1/2 in.
- AIR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.
### Exterior Wall

<table>
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<td>IIC / FIIC</td>
<td>n.a. / n.a.</td>
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</tbody>
</table>

<sup>a</sup> The fire-resistance rating is based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- Cladding (up to the designer)
- Air gap 3/4 in.
- Wood studs 2 in. X 4 in. @ 24 in. O.C.
- Sprayed Polyurethane foam 3-1/2 in.
- Air Barrier membrane
- Nordic X-Lam 4-1/8 in.
- Wood furring 3/4 in. @ 24 in. O.C.
- 1 Type X gypsum board 5/8 in.
**Exterior Wall**

**Title**: Exterior Wall

**Category**: Architecture, Assembly

**Date**: 2020-02-01

**Drawing**: NS-DA2009-US

**Scale**: 1:10

**Fire-resistance rating**: FRR (a) 30 min

**Thermal resistance**: RSI / R 5.8 / 33

**Acoustic ratings**: STC / FSTC IIC / FIIC n.a. / n.a.

---

**CLADDING (UP TO THE DESIGNER)**
- AIR GAP 3/4 in.
- WOOD STUDS 2 in. X 4 in. @ 24 in. O.C.
- WOOD FURRING 2 in. X 6 in. @ 24 in. O.C.
- 1 ROW OF STONE WOOL INSULATION 3-1/2 in.
- 1 ROW OF STONE WOOL INSULATION 5-1/2 in.
- AIR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.

---

*a) The fire-resistance rating is based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.*
### Exterior Wall

<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR (a)</th>
<th>1 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>6.1 / 35</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>STC / FSTC</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td></td>
<td>IIC / FIIC</td>
<td>n.a. / n.a.</td>
</tr>
</tbody>
</table>

(a) The fire-resistance rating is based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- CLADDING (UP TO THE DESIGNER)
- AIR GAP 3/4 in.
- WOOD STUDS 2 in. X 4 in. @ 24 in. O.C.
- WOOD FURRING 2 in. X 6 in. @ 24 in. O.C.
- 1 ROW OF STONE WOOL INSULATION 3-1/2 in.
- 1 ROW OF STONE WOOL INSULATION 5-1/2 in.
- AIR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.
- WOOD FURRING 3/4 in. @ 24 in. O.C.
- 1 TYPE X GYPSUM BOARD 5/8 in.
PARTITION 2
Fire-resistance rating | FRR (a) | 30 min / 30 min
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC (b) / FSTC | 33 / n.a.
| IIC / FIIC | n.a. / n.a.

a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- NORDIC X-LAM 4-1/8 in.
<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR (^{(a)})</th>
<th>1 h / 1 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>STC (^{(b)}) / FSTC</td>
<td>58 / n.a.</td>
</tr>
<tr>
<td></td>
<td>IIC / FIIC</td>
<td>n.a. / n.a.</td>
</tr>
</tbody>
</table>

*a* The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.


- 1 TYPE X GYPSUM BOARD 5/8 in.
- 1 ROW OF MINERAL WOOL INSULATION 2-1/2 in.
- WOOD STUDS 2 in. X 3 in. @ 24 in. O.C.
- NORDIC X-LAM 4-1/8 in.
- WOOD STUDS 2 in. X 3 in. @ 24 in. O.C. OFF-CENTERED FROM THE OTHER ROW OF WOOD STUDS
- 1 ROW OF MINERAL WOOL INSULATION 2-1/2 in.
- 1 TYPE X GYPSUM BOARD 5/8 in.
8-3/8 in.

<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR (a)</th>
<th>1 h / 1 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>n.a. / n.a.</td>
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<tr>
<td>STC / FSTC</td>
<td>53 / n.a.</td>
<td></td>
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<tr>
<td>IIC / FIIC</td>
<td>n.a. / n.a.</td>
<td></td>
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</tbody>
</table>

(a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

1 TYPE X GYPSUM BOARD 5/8 in.
RESILIENT CHANNELS 1/2 in. @ 16 in. O.C. INSTALLED HORIZONTALLY
NORDIC X-LAM 4-1/8 in.
WOOD STUDS 2 in. X 3 in. @ 24 in. O.C.
1 ROW OF MINERAL WOOL INSULATION 2-1/2 in.
1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating | FRR (a) | 1 h / 1 h
---|---|---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC (b) / FSTC | 37 / n.a.
| IIC / FIIC | n.a. / n.a.
---|---|---

a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 12,450 psf.


- 1 TYPE X GYPSUM BOARD 5/8 in.
- RESILIENT CHANNELS 1/2 in. @ 16 in. O.C. INSTALLED HORIZONTALLY
- NORDIC X-LAM 4-1/8 in.
- RESILIENT CHANNELS 1/2 in. @ 16 in. O.C. INSTALLED HORIZONTALLY
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating  |  FRR (a)  |  30 min / 1 h  
Thermal resistance  |  RSI / R  |  n.a. / n.a.  
Acoustic ratings  |  STC (b) / FSTC  |  IIC / FIIC  |  37 / n.a.  |  n.a. / n.a.  

a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- NORDIC X-LAM 4-1/8 in.
- RESILIENT CHANNELS 1/2 in. @ 16 in. O.C. INSTALLED HORIZONTALLY
- 1 TYPE X GYPSUM BOARD 5/8 in.
<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR (a)</th>
<th>30 min / 1 h</th>
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</thead>
<tbody>
<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>STC / FSTC</td>
<td>n.a. / 47</td>
</tr>
<tr>
<td></td>
<td>IIC / FIIC</td>
<td>n.a. / n.a.</td>
</tr>
</tbody>
</table>

a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- NORDIC X-LAM 4-1/8 in.
- AIR GAP 1/2 in.
- WOOD STUDS 2 in. X 3 in. @ 16 in. O.C.
- 1 ROW OF MINERAL WOOL INSULATION 2-1/2 in.
- 1 TYPE X GYPSUM BOARD 5/8 in.
<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR (^{(a)})</th>
<th>1 h / 1 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>STC / FSTC / IIC / FIIC</td>
<td>n.a. / 50 / n.a.</td>
</tr>
</tbody>
</table>

\(a\) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- 1 TYPE X GYPSUM BOARD 5/8 in.
- 1 ROW OF MINERAL WOOL INSULATION 2-1/2 in.
- WOOD STUDS 2 in. X 3 in. @ 16 in. O.C.
- AIR GAP 1/2 in.
- NORDIC X-LAM 4-1/8 in.
- AIR GAP 1/2 in.
- WOOD STUDS 2 in. X 3 in. @ 16 in. O.C.
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating | FRR (a) | 1 h / 1 h
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | n.a. / 54
IIC / FIIC | n.a. / n.a.

(a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 12,450 plf.

- 1 TYPE X GYPSUM BOARD 5/8 in.
- 1 ROW OF MINERAL WOOL INSULATION 2-1/2 in.
- WOOD STUDS 2 in. X 3 in. @ 16 in. O.C.
- AIR GAP 1/2 in.
- NORDIC X-LAM 4-1/8 in.
- AIR GAP 1/2 in.
- WOOD STUDS 2 in. X 3 in. @ 16 in. O.C.
- 1 ROW OF MINERAL WOOL INSULATION 2-1/2 in.
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating

| FRR (a) | 1.5 h / 1.5 h |

Thermal resistance

| RSI / R | n.a. / n.a. |

Acoustic ratings

| STC / FSTC | 37 / n.a. |
| IIC / FIIC | n.a. / n.a. |

a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 32,150 plf.

- NORDIC X-LAM 6-7/8 in.
<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Fire-resistance rating</td>
<td>FRR (a) 1.5 h / 2.5 h</td>
</tr>
<tr>
<td>Thermal resistance</td>
<td>RSI / R n.a. / n.a.</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>STC / FSTC 53 / n.a. IIC / FIIC n.a. / n.a.</td>
</tr>
</tbody>
</table>

(a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 32,150 plf.

- NORDIC X-LAM 6-7/8 in.
- Z-CHANNELS (26 GAUGE) 1-3/8 in. @ 16 in. O.C. INSTALLED VERTICALLY
- 1 ROW OF FIBERGLASS INSULATION OF TYPE "ROSE FIBERGLAS ECOTOUCH" 1-1/2 in.
- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
Fire-resistance rating  |  FRR \(^{(a)}\)  |  2.5 h / 2.5 h
--- | --- | ---
Thermal resistance   |  RSI / R  |  n.a. / n.a.
--- | --- | ---
Acoustic ratings     |  STC / FSTC  |  71 / n.a.
     |  IIC / FIIC  |  n.a. / n.a.
--- | --- | ---
\(a)\) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 32,150 plf.

- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
- METAL STUDS (26 GAUGE) 1-1/4 in. X 3-5/8 in. @ 16 in. O.C.
- 1 ROW OF FIBERGLASS INSULATION OF TYPE “ROSE FIBERGLAS ECOTOUCH” 3-5/8 in.
- AIR GAP 3/4 in.
- NORDIC X-LAM 6-7/8 in.
- Z-CHANNELS (26 GAUGE) 1-3/8 in. @ 16 in. O.C. INSTALLED VERTICALLY
- 1 ROW OF FIBERGLASS INSULATION OF TYPE “ROSE FIBERGLAS ECOTOUCH” 1-1/2 in.
- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
Fire-resistance rating | FRR (a) | 2.5 h / 2.5 h
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | 53 / n.a.
| IIC / FIIC | n.a. / n.a.

(a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 32,150 plf.

- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
- RESILIENT CHANNELS 1/2 in. @ 16 in. O.C. INSTALLED HORIZONTALLY
- PLYWOOD STRIPS 1/2 in. @ 16 in. O.C.
- NORDIC X-LAM 6-7/8 in.
- Z-CHANNELS (26 GAUGE) 1-3/8 in. @ 16 in. O.C. INSTALLED VERTICALLY
- 1 ROW OF FIBERGLASS INSULATION OF TYPE “ROSE FIBERGLAS ECOTOUCH” 1-1/2 in.
- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
### Partition

**Architecture, Assembly**

**DRAWING**

NS-DA2112-US

<table>
<thead>
<tr>
<th>TITLE</th>
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<tbody>
<tr>
<td>Partition</td>
<td>NS-DA2</td>
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<table>
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<th>SCALE</th>
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<th>PAGE</th>
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<tr>
<td>Architecture, Assembly</td>
<td>1:10</td>
<td>2020-02-01</td>
<td>2.13</td>
</tr>
</tbody>
</table>

#### Fire-resistance rating

| FRR (a) | 2.5 h / 2.5 h |

#### Thermal resistance

| RSI / R | n.a. / n.a. |

#### Acoustic ratings

| STC / FSTC | 53 / n.a. |
| IIC / FIIC  | n.a. / n.a. |

#### Notes:

- The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 32,150 plf.

- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
- NORDIC X-LAM 6-7/8 in.
- Z-CHANNELS (26 GAUGE) 1-3/8 in. @ 16 in. O.C. INSTALLED VERTICALLY
- 1 ROW OF FIBERGLASS INSULATION OF TYPE "ROSE FIBERGLAS ECOTOUCH" 1-1/2 in.
- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
Fire-resistance rating | FRR (a) | 2.5 h / 2.5 h
---|---|---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | 65 / n.a.
| IIC / FIIC | n.a. / n.a.

a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 32,150 plf.

- 1 TYPE C GYPSUM BOARD 1/2 in.
- METAL STUDS (26 GAUGE) 1-1/4 in. X 2-1/2 in. @ 16 in. O.C.
- 1 ROW OF STONE WOOL INSULATION OF TYPE “ROXUL AFB” 2-1/2 in.
- AIR GAP 3/4 in.
- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
- NORDIC X-LAM 6-7/8 in.
- Z-CHANNELS (26 GAUGE) 1-3/8 in. @ 16 in. O.C. INSTALLED VERTICALLY
- 1 ROW OF FIBERGLASS INSULATION OF TYPE “ROSE FIBERGLAS ECOTOUCH” 1-1/2 in.
- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR&lt;sup&gt;(a)&lt;/sup&gt;</th>
<th>2.5 h / 1.5 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>STC / FSTC</td>
<td>62 / n.a.</td>
</tr>
</tbody>
</table>

<sup>(a)</sup> The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 32,150 plf.

- 1 TYPE C GYPSUM BOARD 1/2 in.
- METAL STUDS (26 GAUGE) 1-1/4 in. X 2-1/2 in. @ 16 in. O.C.
- 1 ROW OF STONE WOOL INSULATION OF TYPE “ROXUL AFB” 2-1/2 in.
- AIR GAP 3/4 in.
- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating | FRR (a) | 2.5 h / 2.5 h  
Thermal resistance | RSI / R | n.a. / n.a.  
Acoustic ratings | STC / FSTC | 61 / n.a.  
IIC / FIIC | n.a. / n.a.  
a) The fire-resistance ratings on each side of the partition are based on an effective length of 10 feet and on a concentric uniform load of 32,150 plf.

- 1 TYPE C GYPSUM BOARD 1/2 in.  
- METAL STUDS (26 GAUGE) 1-1/4 in. X 2-1/2 in. @ 16 in. O.C.  
- 1 ROW OF STONE WOOL INSULATION OF TYPE “ROXUL AFB” 2-1/2 in.  
- AIR GAP 3/4 in.  
- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.  
- NORDIC X-LAM 6-7/8 in.  
- 2 TYPE X GYPSUM BOARDS 5/8 in. EA.
<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR&lt;sup&gt;(a)&lt;/sup&gt;</th>
<th>1.5 h</th>
</tr>
</thead>
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<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>n.a.  / n.a.</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>STC / FSTC</td>
<td>39 / n.a.</td>
</tr>
<tr>
<td></td>
<td>IIC / FIIC</td>
<td>27 / n.a.</td>
</tr>
</tbody>
</table>

<sup>a</sup>) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating  
FRR\(^{(a)}\)  2 h

Thermal resistance  
RSI / R  n.a. / n.a.

Acoustic ratings  
STC\(^{(b)}\) / FSTC  64 / n.a.  
IIC\(^{(a)}\) / FIIC  59 / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.


- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - RESILIENT METALLIC HANGERS 4 in.
  - METAL TRACKS @ 16 in. O.C. MIN
  - SOUNDPROOFING MATERIAL 4 in.
  - 2 TYPE X GYPSUM BOARDS 1/2 in. EA.
Fire-resistance rating  
FRR \(^{(a)}\)  
2 h

Thermal resistance  
RSI / R  
n.a. / n.a.

Acoustic ratings  
STC / FSTC  
n.a. / n.a.  
IIC / FIIC  
n.a. / n.a.

\(^{(a)}\) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- UNDERLAY OF TYPE “FERMACELL 2E32” 1-1/4 in. OR “PERMABASE” WITH “SONOPAN”
- NORDIC X-LAM 6-7/8 in.
- NORDIC JOIST 7-7/8 in. @ 24 in. O.C.
- SOUNDPROOFING MATERIAL 3-1/2 in.
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating  
FRR (a) 1.5 h

Thermal resistance  
RSI / R  
n.a. / n.a.

Acoustic ratings  
STC / FSTC  
n.a. / 47
IIC / FIIC  
n.a. / 46

(a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- FLOATING FLOOR 3/8 in.
- UNDERLAY OF TYPE "INSONOBOIS" 1/8 in.
- 2 UNDERLAYS OF TYPE "FIBEROCK" 5/8 in. EA.
- UNDERLAY OF TYPE "INSONOMAT" 5/8 in.
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating | FRR (a) | 2 h
--- | --- | ---
Thermal resistance | RSI / R | n.a. / n.a.
--- | --- | ---
Acoustic ratings | STC / FSTC | n.a. / 59
IIC / FIIC | n.a. / 61
--- | --- | ---

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- FLOATING FLOOR 3/8 in.
- UNDERLAY OF TYPE “INSONOBOIS” 1/8 in.
- 2 FLOOR BACKERBOARDS OF TYPE “FIBEROCK” 5/8 in. EA.
- UNDERLAY OF TYPE “INSONOMAT” 5/8 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - RESILIENT METALLIC HANGERS 7-7/8 in. @ 48 in. O.C.
  - METAL TRACKS @ 24 in. O.C.
  - 2 ROWS OF STONE WOOL INSULATION OF TYPE “ROXUL” (2.5 pcf) 3-1/2 in. EA.
  - 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating  | FRR (a) | 2 h |
--- | --- | --- |
Thermal resistance  | RSI / R | n.a. / n.a. |
Acoustic ratings  | STC / FSTC | n.a. / 58 |
| IIC / FIIC | n.a. / 60 |

*a* The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- FLOATING FLOOR 3/8 in.
- UNDERLAY OF TYPE "INSONOBOIS" 1/8 in.
- 2 FLOOR BACKERBOARDS OF TYPE "FIBEROCK" 5/8 in. EA.
- UNDERLAY OF TYPE "INSONOMAT" 5/8 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - RESILIENT METALLIC HANGERS 7-7/8 in. @ 48 in. O.C.
  - METAL TRACKS @ 24 in. O.C.
  - 2 ROWS OF STONE WOOL INSULATION OF TYPE “ROXUL” (2.5pcf) 3-1/2 in. EA.
  - 1 TYPE X GYPSUM BOARD 5/8 in.
  - 1 REGULAR GYPSUM BOARD 1/2 in.
Fire-resistance rating | FRR (a) | 2 h
---|---|---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | n.a. / 54
 | IIC / FIC | n.a. / 56

(a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- FLOATING FLOOR 3/8 in.
- UNDERLAY OF TYPE "INSONOBOIS" 1/8 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - RESILIENT METALLIC HANGERS 7-7/8 in. @ 48 in. O.C.
  - METAL TRACKS @ 24 in. O.C.
  - 2 ROWS OF STONE WOOL INSULATION OF TYPE "ROXUL" (2.5 pcf) 3-1/2 in. EA.
  - 1 TYPE X GYPSUM BOARD 5/8 in.
  - 1 REGULAR GYPSUM BOARD 1/2 in.
Fire-resistance rating | FRR<sup>(a)</sup> | 2 h
---|---|---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | n.a. / 53
 | IIC / FIIC | n.a. / 52

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<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
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<tr>
<td>Thermal resistance</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>n.a. / 53</td>
</tr>
</tbody>
</table>

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(a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- FLOATING FLOOR 3/8 in.
- UNDERLAY OF TYPE "INSONOBOIS" 1/8 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - RESILIENT METALLIC HANGERS 4 in. @ 48 in. O.C.
  - METAL TRACKS @ 24 in. O.C.
  - 1 ROW OF STONE WOOL INSULATION OF TYPE "ROXUL" (2.5 pcf) 3-1/2 in. EA.
  - 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating
FRR \(^{(A)}\) 1.5 h

Thermal resistance
RSI / R n.a. / n.a.

Acoustic ratings
STC \(^{(b)}\) / FSTC 62 / n.a.
IIC \(^{(b)}\) / FIIC 59 / n.a.

---

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.


- GYPSUM FIBERBOARD OF TYPE “FERMACELL” 1 in.
- 2 LAYERS OF PELLETS AND HONEYCOMB CORE OF TYPE “FERMACELL” 1-1/4 in. EA.
- KRAFT PAPER UNDERLAY
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating | FRR | 2 h
--- | --- | ---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | n.a. / 61
IIC / FIIC | n.a. / 50

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- CONCRETE TOPPING (125 pcf) 1-1/2 in.
- WOOD FIBER ACOUSTIC PANEL OF TYPE "BP ECO-LOGICAL" 1/2 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - RESILIENT METALLIC HANGERS 4 in. @ 48 in. O.C.
  - METAL TRACKS @ 24 in. O.C.
  - 1 ROW OF STONE WOOL INSULATION OF TYPE "ROXUL" (2.5 pcf) 3-1/2 in.
  - 1 TYPE X GYPSUM BOARD 5/8 in.
  - 1 REGULAR GYPSUM BOARD 1/2 in.
Fire-resistance rating
FRR\(^{(a)}\) 1.5 h

Thermal resistance
RSI / R n.a. / n.a.

Acoustic ratings
STC / FSTC 55 / n.a.
IIC / FIIC 51 / n.a.

*(a)* The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- ENGINEERED WOOD FLOOR 3/8 in.
- UNDERLAY OF TYPE "ROBERTS SOFT STRIDE" 1/8 in.
- CONCRETE TOPPING 1-1/2 in.
- UNDERLAY OF TYPE "INSONOMAT" 5/8 in.
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating | FRR (a) | 2 h
--- | --- | ---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | 70 / n.a.
IIC / FIIC | 56 / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- CONCRETE TOPPING 1-1/2 in.
- UNDERLAY OF TYPE "OWENS CORNING QUIÉTUDE" 3/8 in.
- NORDIC X-LAM 6-7/8 in.
- Z-CHANNELS (26 GAUGE) 3-1/2 in. @ 24 in. O.C.
- 1 ROW OF FIBERGLASS INSULATION OF TYPE "ROSE FIBERGLAS ECOTOUCH" 3-5/8 in.
- FURRING CHANNELS 5/8 in. @ 16 in. O.C.
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating | FRR \(^{(a)}\) | 2 h
---|---|---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | 69 / n.a.
IIC / FIIC | 54 / n.a.

(a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- CONCRETE TOPPING 1-1/2 in.
- TAR FIBERBOARD 3/8 in.
- NORDIC X-LAM 6-7/8 in.
- Z-CHANNELS (26 GAUGE) 3-1/2 in. @ 24 in. O.C.
- 1 ROW OF FIBERGLASS INSULATION OF TYPE "ROSE FIBERGLASS ECOTOUCH" 3-5/8 in.
- FURRING CHANNELS 5/8 in. @ 16 in. O.C.
- 1 TYPE X GYPSUM BOARD 5/8 in.
<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR (A)</th>
<th>2 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>STC / FSTC</td>
<td>69 / n.a.</td>
</tr>
<tr>
<td></td>
<td>IIC / FIIC</td>
<td>58 / n.a.</td>
</tr>
</tbody>
</table>

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- ENGINEERED WOOD FLOOR 3/8 in.
- UNDERLAY OF TYPE “ROBERTS SOFT STRIDE” 1/8 in.
- CONCRETE TOPPING 1-1/2 in.
- TAR FIBERBOARD 3/8 in.
- NORDIC X-LAM 6-78 in.
- Z-CHANNELS (26 GAUGE) 3-1/2 in. @ 24 in. O.C.
- 1 ROW OF FIBERGLASS INSULATION OF TYPE
  “ROSE FIBERGLAS ECOTOUCH” 3-5/8 in.
- FURRING CHANNELS 5/8 in. @ 16 in. O.C.
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating | FRR \(^{(a)}\) | 1.5 h
---|---|---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | 72 / n.a.
IIC / FIIC | 65 / n.a.

\(^{(a)}\) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- CONCRETE TOPPING 1-1/2 in.
- UNDERLAY OF TYPE “OWENS CORNING QUIÉTUDE” 3/8 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - METALLIC HANGERS 2-1/2 in.
  - CHANNEL IRONS 1-1/2 in. @ 48 in. O.C.
  - FURRING CHANNELS 7/8 in. @ 16 in. O.C.
  - 1 ROW OF FIBERGLASS INSULATION OF TYPE
    “ROSE FIBERGLAS ECOTOUCH” 3-5/8 in.
  - 2 TYPE C GYPSUM BOARDS 1/2 in. EA.
Fire-resistance rating | FRR (a) | 1.5 h
--- | --- | ---
Thermal resistance | RSI / R | n.a. / n.a.

Acoustic ratings | STC / FSTC | IIC / FIIC |
--- | --- | --- |
73 | 66 | n.a. / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- CONCRETE TOPPING 1-1/2 in.
- UNDERLAY OF TYPE “OWENS CORNING QUIÉTUDE” 3/8 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - METALLIC HANGERS 2 in.
  - CHANNEL IRONS 1-1/2 in. @ 48 in. O.C.
  - FURRING CHANNELS 7/8 in. @ 16 in. O.C.
  - 1 ROW OF FIBERGLASS INSULATION OF TYPE “ROSE FIBERGLAS ECOTOUCH” 3-5/8 in.
  - RESILIENT CHANNELS 1/2 in. @ 24 in. O.C.
  - 2 TYPE C GYPSUM BOARDS 1/2 in. EA.
Fire-resistance rating | FRR (A) | 1.5 h
--- | --- | ---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | 72 / n.a.
| IIC / FIIC | 62 / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- CONCRETE TOPPING 1-1/2 in.
- UNDERLAY OF TYPE “OWENS CORNING QUIÉTUDE” 3/8 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - METALLIC HANGERS 2 in.
  - CHANNEL IRONS 1-1/2 in. @ 48 in. O.C.
  - FURRING CHANNELS 7/8 in. @ 16 in. O.C.
  - 1 ROW OF FIBERGLASS INSULATION OF TYPE “ROSE FIBERGLAS ECOTOUCH” 3-5/8 in.
  - RESILIENT CHANNELS 1/2 in. @ 24 in. O.C.
  - 1 TYPE C GYPSUM BOARD 1/2 in.
Fire-resistance rating | FRR (a) | 1.5 h

Thermal resistance | RSI / R | n.a. / n.a.

Acoustic ratings
| STC (b) / FSTC | 75 / n.a.
| IIC (b) / FIIC | 66 / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.
b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- FLOATING FLOOR 3/8 in.
- UNDERLAY OF TYPE “ACOUSTITECH PREMIUM” 1/8 in.
- PREFABRICATED CONCRETE TOPPING 1-1/2 in.
- TAR FIBERBOARD 3/8 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - METALLIC HANGERS 5-3/4 in.
  - CHANNEL IRONS 1-1/2 in. @ 48 in. O.C.
  - FURRING CHANNELS 7/8 in. @ 16 in. O.C.
  - 1 ROW OF FIBERGLASS INSULATION OF TYPE “ROSE FIBERGLAS ECOTOUCH” 3-5/8 in.
  - 2 TYPE C GYPSUM BOARDS 1/2 in. EA.
Fire-resistance rating  |  FRR (a)  |  1 h  

Thermal resistance  |  RSI / R  |  n.a. / n.a.  

Acoustic ratings  |  STC / FSTC  |  52 / n.a.  
                  |  IIC / FIIC  |  51 / n.a.  

a) The fire-resistance rating is based on a span of 12 feet and on a uniform load of 90 psf.

- CARPET TILES 1/4 in.
- PREFABRICATED CONCRETE TOPPING (144pcf) 2-3/4 in.
- UNDERLAY OF TYPE “INSONOMAT” 5/8 in.
- NORDIC LAM DECKING 3-1/2 in.
Fire-resistance rating
FRR (a) 2 h

Thermal resistance
RSI / R n.a. / n.a.

Acoustic ratings
STC / FSTC IIC / FIIC 61 / n.a. 55 / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- 2 ROWS OF PANELS OF TYPE “HUBER ENGINEERED WOOD ADVANTECH” 1-3/8 in. EA.
- UNDERLAY OF TYPE “GENIEMAT FF” 1 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - BRACKETS OF TYPE “GENIECLIP LB” 4-3/8 in.
  - CHANNEL IRONS 1-1/2 in. @ 48 in. O.C. FIXED AT THE BOTTOM OF THE BRACKETS
  - FURRING CHANNELS 7/8 in. @ 24 in. O.C.
  - 1 ROW OF FIBERGLASS INSULATION OF TYPE “JOHNS MANVILLE UNFACED BATTS R13” 3-1/2 in.
  - 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating | FRR (a) | 2 h
---|---|---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | 58 / n.a.
| IIC / FIIC | 58 / n.a.

(a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- VINYL TILES FLOORING 1/8 in.
- UNDERLAY OF TYPE “GENIEMAT RST05” 1/4 in.
- NORDIC X-LAM 6-78 in.
- SUSPENDED CEILING:
  - BRACKETS OF TYPE “GENIECLIP LB” 4-3/8 in.
  - CHANNEL IRONS 1-1/2 in. @ 48 in. O.C. FIXED AT THE BOTTOM OF THE BRACKETS
  - FURRING CHANNELS 7/8 in. @ 24 in. O.C.
  - 1 ROW OF FIBERGLASS INSULATION OF TYPE “JOHNS MANVILLE UNFACED BATTS R13” 3-1/2 in.
  - 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating  |  FRR (a)  |  2 h
\hline
Thermal resistance  |  RSI / R  |  n.a. / n.a.
\hline
Acoustic ratings  |  STC / FSTC  |  57 / n.a.
\hline
                         |  IIC / FIIC  |  54 / n.a.
\hline
\textit{a)} The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- VINYL TILES FLOORING 1/8 in.
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - BRACKETS OF TYPE “GENIECLIP LB” 4-3/8 in.
  - CHANNEL IRONS 1-1/2 in. @ 48 in. O.C. FIXED AT THE BOTTOM OF THE BRACKETS
  - FURRING CHANNELS 7/8 in. @ 24 in. O.C.
  - 1 ROW OF FIBERGLASS INSULATION OF TYPE “JOHNS MANVILLE UNFACED BATTS R13” 3-1/2 in.
  - 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating | FRR (a) | 2.5 h
--- | --- | ---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC | n.a. / 54
IIC / FIIC | n.a. / 53

(a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- FLOATING FLOOR 3/8 in.
- UNDERLAY OF TYPE "INSONOBOIS" 1/8 in.
- TOPPING OF TYPE "MAXXON GYP-CRETE" (128 pcf) 3/4 in.
- ENTANGLED FILAMENT MAT OF TYPE "MAXXON ACOUSTI-MAT" 1/4 in.
- NORDIC X-LAM 6-7/8 in.
- RESILIENT CHANNELS 1/2 in. @ 24 in. O.C.
- 1 TYPE X GYPSUM BOARD OF TYPE "QUIETROCK" 5/8 in.
- SUSPENDED DRYWALL GRID SYSTEM OF TYPE "ARMSTRONG":
  - METALLIC HANGERS 15 in.
  - T-CHANNELS 1-5/8 in. @ 48 in. O.C.
  - 1 ROW OF STONE WOOL INSULATION OF TYPE "ROXUL" (2.5 pcf) 3 in.
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating

<table>
<thead>
<tr>
<th>FRR (a)</th>
<th>2 h</th>
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</thead>
</table>

Thermal resistance

<table>
<thead>
<tr>
<th>RSI / R</th>
<th>n.a. / n.a.</th>
</tr>
</thead>
</table>

Acoustic ratings

<table>
<thead>
<tr>
<th>STC (b) / FSTC</th>
<th>62 / n.a.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIC (b) / FIIC</td>
<td>59 / n.a.</td>
</tr>
</tbody>
</table>

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.


- GYPSUM FIBERBOARD OF TYPE “FERMACELL” 1 in.
- 2 LAYERS OF PELLETS AND HONEYCOMB CORE OF TYPE “FERMACELL” 1-1/4 in. EA.
- KRAFT PAPER UNDERLAY
- NORDIC X-LAM 6-7/8 in.
- 1 TYPE X GYPSUM BOARD 5/8 in.
9-1/4 in. TO 9-5/8 in.

Fire-resistant rating  
FRR (a) 1.5 h

Thermal resistance  
RSI / R  
n.a. / n.a.

Acoustic ratings  
STC / FSTC (b)  
n.a. / > 50
IIC / FIIC (b)  
n.a. / > 50

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- CARPET OR FLOATING FLOOR 3/8 in.
- RESILIENT UNDERLAY (RUBBER OR FELT) 1/8 in.
- TOPPING, AT LEAST 15.6 psf (I.E. CONCRETE OR OF TYPE “MAXXON GYP-CRETE”)
- RESILIENT UNDERLAY (RUBBER 3/8 in., FELT 3/4 in., OR WOOD FIBERBOARD 1/2 in.)
- NORDIC X-LAM 6-7/8 in.
9-7/8 in. TO 10-1/4 in.

<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR (a)</th>
<th>2 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>STC / FSTC (b)</td>
<td>n.a. / &gt; 50</td>
</tr>
<tr>
<td></td>
<td>IIC / FIIC (b)</td>
<td>n.a. / &gt; 50</td>
</tr>
</tbody>
</table>

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.


- CARPET OR FLOATING FLOOR 3/8 in.
- RESILIENT UNDERLAY (RUBBER OR FELT) 1/8 in.
- TOPPING, AT LEAST 15.6 psf (I.E. CONCRETE OR OF TYPE “MAXXON GYP-CRETE”)
- RESILIENT UNDERLAY (RUBBER 3/8 in., FELT 3/4 in., OR WOOD FIBERBOARD 1/2 in.)
- NORDIC X-LAM 6-7/8 in.
- 1 TYPE X GYPSUM BOARD 5/8 in.
8-1/2 in. TO 8-7/8 in.  

--- CARPET OR FLOATING FLOOR 3/8 in.  
--- RESILIENT UNDERLAY (RUBBER OR FELT) 1/8 in.  
--- PREFABRICATED TOPPING, AT LEAST 5.1 psf (3/4 in. OF TYPE “FERMACELL” OR OF TYPE “FIBREROCK”)  
--- RESILIENT UNDERLAY (RUBBER 3/8 in., FELT 3/4 in., OR WOOD FIBERBOARD 1/2 in.)  
--- NORDIC X-LAM 6-7/8 in.

--- Fire-resistance rating FRR (a) 1.5 h  
--- Thermal resistance RSI / R n.a. / n.a.  
--- Acoustic ratings STC / FSTC (b) n.a. / > 45  
--- IIC / FIIC (b) n.a. / > 45  

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

Fire-resistance rating | FRR (a) | 2 h
---|---|---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC / FSTC (b) | n.a. / > 45
IIC / FIIC (b) | n.a. / > 45

(a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- CARPET OR FLOATING FLOOR 3/8 in.
- RESILIENT UNDERLAY (RUBBER OR FELT) 1/8 in.
- PREFABRICATED TOPPING, AT LEAST 5.1 psf (3/4 in. OF TYPE "FERMACELL" OR OF TYPE "FIBREROCK")
- RESILIENT UNDERLAY (RUBBER 3/8 in., FELT 3/4 in., OR WOOD FIBERBOARD 1/2 in.)
- NORDIC X-LAM 6-7/8 in.
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating  
| FRR (a) | 1.5 h |

Thermal resistance  
| RSI / R | n.a. / n.a. |

Acoustic ratings  
| STC (b) / FSTC | 64 / n.a. |
| IIC (b) / FIIC | 53 / n.a. |

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.
b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- PREFABRICATED CONCRETE TOPPING 1-1/2 in.
- TONGUE AND GROOVE OSB SHEATHING 3/4 in.
- WOOD RAFTERS 2 in. X 3 in. @ 24 in. O.C.
- SILICA SAND (#71) 2 in.
- RUBBER MEMBRANE BANDS 3/8 in. UNDER RAFTERS
- POLYETHYLENE SHEETING 6 mil
- NORDIC X-LAM 6-7/8 in.
<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR (^{(a)})</th>
<th>1.5 h</th>
</tr>
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<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>n.a. / n.a.</td>
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<td>Acoustic ratings</td>
<td>STC (^{(b)}) / FSTC</td>
<td>66 / n.a.</td>
</tr>
<tr>
<td></td>
<td>IIC (^{(b)}) / FIIC</td>
<td>60 / n.a.</td>
</tr>
</tbody>
</table>

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- PREFABRICATED CONCRETE TOPPING 1-1/2 in.
- UNDERLAY OF TYPE “REGUPOL SONUS WAVE” 5/8 in.
- TONGUE AND GROOVE OSB SHEATHING 3/4 in.
- WOOD RAFTERS 2 in. X 3 in. @ 24 in. O.C.
- SILICA SAND (#71) 2 in.
- RUBBER MEMBRANE BANDS 3/8 in. UNDER RAFTERS
- POLYETHYLENE SHEETING 6 mil
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating  
FRR $^{(a)}$  
1.5 h

Thermal resistance  
$\text{RSI} / \text{R}$  
n.a. / n.a.

Acoustic ratings  
$\text{STC}^{(b)} / \text{FSTC}$  
59 / n.a.

$\text{IIC}^{(b)} / \text{FIIC}$  
53 / n.a.

---

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- UNDERLAY OF TYPE “FERMACELL 2E31” 1-1/4 in.
- TONGUE AND GROOVE OSB SHEATHING 3/4 in.
- WOOD RAFTERS 2 in. X 3 in. @ 24 in. O.C.
- SILICA SAND (#71) 2 in.
- RUBBER MEMBRANE BANDS 3/8 in. UNDER RAFTERS
- POLYETHYLENE SHEETING 6 mil
- NORDIC X-LAM 6-7/8 in.
**Fire-resistance rating**

| FRR (a) | 1.5 h |

**Thermal resistance**

| RSI / R | n.a. / n.a. |

**Acoustic ratings**

| STC (b) / FSTC | 56 / n.a. |
| IIC (b) / FIIC | 50 / n.a. |

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- UNDERLAY OF TYPE “SONODECK INSULFLOOR” 1 in.
- TONGUE AND GROOVE OSB SHEATHING 3/4 in.
- WOOD RAFTERS 2 in. X 3 in. @ 24 in. O.C.
- SILICA SAND (#71) 2 in.
- RUBBER MEMBRANE BANDS 3/8 in. UNDER RAFTERS
- POLYETHYLENE SHEETING 6 mil
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating

<table>
<thead>
<tr>
<th></th>
<th>FRR (a)</th>
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Thermal resistance

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Acoustic ratings

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<td>IIC (b) / FIIC</td>
<td>54 / n.a.</td>
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</tbody>
</table>

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.
b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- PREFabricated concrete topping 1-1/2 in.
- UNDERLAY of TYPE “REGUPOL sonus wave” 5/8 in.
- TONGUE and GROOVE OSB SHEATHING 3/4 in.
- WOOD RAFTERS 2 in. X 3 in. @ 24 in. O.C.
- RUBBER MEMBRANE BANDS 3/8 in. UNDER RAFTERS
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating  | FRR (a) | 1.5 h
--- | --- | ---
Thermal resistance  | RSI / R | n.a. / n.a.
Acoustic ratings  | STC (b) / FSTC  | 60 / n.a.
 | IIC (b) / FIIC  | 54 / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.
b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- PREFABRICATED CONCRETE TOPPING 1-1/2 in.
- UNDERLAY OF TYPE “REGUPOL SONUS WAVE” 5/8 in.
- TONGUE AND GROOVE OSB SHEATHING 3/4 in.
- WOOD RAFTERS 2 in. X 3 in. @ 24 in. O.C.
- 1 ROW OF FIBERGLASS INSULATION 2-1/2 in.
- RUBBER MEMBRANE BANDS 3/8 in. UNDER RAFTERS
- NORDIC X-LAM 6-7/8 in.
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\(^{(a)}\) The fire-resistance rating is based on a span of 12 feet and on a uniform load of 90 psf.

- PREFABRICATED CONCRETE TOPPING 1-1/2 in.
- UNDERLAY OF TYPE “REGUPOL SONUS WAVE” 5/8 in.
- TONGUE AND GROOVE OSB SHEATHING 3/4 in.
- WOOD RAFTERS 2 in. X 3 in. @ 24 in. O.C.
- SILICA SAND (#71) 2 in.
- RUBBER MEMBRANE BANDS 3/8 in. UNDER RAFTERS
- POLYETHYLENE SHEETING 6 mil
- NORDIC LAM DECKING 3-1/2 in.
Fire-resistance rating  
FRR \(^{(a)}\)  
1.5 h

Thermal resistance  
RSI / R  
n.a. / n.a.

Acoustic ratings  
STC \(^{(b)}\) / FSTC  
56 / n.a.

IIC \(^{(b)}\) / FIIC  
52 / n.a.

\(\text{a)}\) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

\(\text{b)}\) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- UNDERLAY OF TYPE “FERMACELL 2E31” 1-1/4 in.
- PREFABRICATED CONCRETE TOPPING (147 pcf) 2-3/4 in.
- UNDERLAY OF TYPE “REGUPOL SONUS WAVE” 1 in.
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating  
FRR (a) 1.5 h

Thermal resistance  
RSI / R n.a. / n.a.

Acoustic ratings  
STC (b) / FSTC 57 / n.a.
IIC (b) / FIIC 51 / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.
b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- LAMINATED FLOORING 3/8 in.
- UNDERLAY OF TYPE “ACOUSTITECH PREMIUM” 1/8 in.
- PREFABRICATED CONCRETE TOPPING (147 pcf) 2-3/4 in.
- RIGID SHEATHING BOARD OF TYPE “ROXUL COMFORTBOARD IS” 1-1/4 in.
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating | FRR (a) | 1.5 h
---|---|---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC (b) / FSTC | 57 / n.a.
IIC (c) / FIIC | 51 / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.
b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- LAMINATED FLOORING 3/8 in.
- UNDERLAY OF TYPE “ROBERTS SOFT STRIDE” 1/8 in.
- PREFABRICATED CONCRETE TOPPING (147 pcf) 2-3/4 in.
- RIGID SHEATHING BOARD OF TYPE “ROXUL COMFORTBOARD IS” 1-1/4 in.
- NORDIC X-LAM 6-7/8 in.
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire-resistance rating (FRR)</td>
<td>1.5 h</td>
</tr>
<tr>
<td>Thermal resistance (RSI / R)</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td></td>
</tr>
<tr>
<td>STC (a) / FSTC</td>
<td>57 / n.a.</td>
</tr>
<tr>
<td>IIC (b) / FIIC</td>
<td>51 / n.a.</td>
</tr>
</tbody>
</table>

- **Hardwood Flooring of Type**: "TORLYS EVEREST PREMIER" 3/8 in.
- **Underlay of Type**: "ROBERTS SOFT STRIDE" 1/8 in.
- **Prefabricated Concrete Topping**: (147 pcf) 2-3/4 in.
- **Rigid Sheathing Board of Type**: "ROXUL COMFORTBOARD IS" 1-1/4 in.
- **Nordic X-Lam**: 6-7/8 in.

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*a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).*
Fire-resistance rating | FRR (a) | 1.5 h
---|---|---
Thermal resistance | RSI / R | n.a. / n.a.
Acoustic ratings | STC (b) / FSTC | 60 / n.a.
 | IIC (b) / FIIC | 58 / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.
b) Acoustic performance based on a CLT thickness of 131 mm (5-1/8 in.).

- LAMINATED FLOORING 3/8 in.
- UNDERLAY OF TYPE “ROBERTS SOFT STRIDE” 1/8 in.
- PREFABRICATED CONCRETE TOPPING 1-1/2 in.
- UNDERLAY OF TYPE “REGUPOL SONUS WAVE” 5/8 in.
- TONGUE AND GROOVE OSB SHEATHING 3/4 in.
- WOOD RAFTERS 2 in. X 3 in. @ 24 in. O.C.
- 1 ROW OF FIBERGLASS INSULATION 2-1/2 in.
- RUBBER MEMBRANE BANDS 3/8 in. UNDER RAFTERS
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating  | FRR (a) | 1 h
---|---|---
Thermal resistance  | RSI / R | n.a. / n.a.
Acoustic ratings  | STC / FSTC | 65 / n.a.
| IIC / FIIC | 62 / n.a.

a) The fire-resistance rating is based on a span of 12 feet and on a uniform load of 90 psf.

- LAMINATED FLOORING 3/8 in.
- UNDERLAY OF TYPE “ROBERTS SOFT STRIDE” 1/8 in.
- PREFABRICATED CONCRETE TOPPING 1-1/2 in.
- UNDERLAY OF TYPE “REGUPOL SONUS WAVE” 5/8 in.
- TONGUE AND GROOVE OSB SHEATHING 3/4 in.
- WOOD RAFTERS 2 in. X 3 in. @ 24 in. O.C.
- SILICA SAND (#71) 2 in.
- RUBBER MEMBRANE BANDS 3/8 in. UNDER RAFTERS
- POLYETHYLENE SHEETING 6 mil
- NORDIC LAM DECKING 3-1/2 in.
Fire-resistance rating | FRR\(^{(a)}\) | 1 h
---|---|---
Thermal resistance | RSI / R | 7.9 / 45
Acoustic ratings | STC / FSTC | n.a. / n.a.
IIC / FIIC | n.a. / n.a.

(a) The fire-resistance rating is based on a span of 12 feet and on a uniform load of 80 psf.

- TWO-LAYER ELASTOMERIC MEMBRANE ROOFING
- ROOFING UNDERLAY (UP TO THE DESIGNER)
- 2 ROWS OF POLYISOCYANurate INSULATION 3-1/2 in. EA.
- VAPOR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.
Fire-resistance rating  FRR<sup>(a)</sup>  1.5 h
Thermal resistance  RSI / R  8.2 / 47
Acoustic ratings  STC / FSTC  n.a. / n.a.
IIC / FIIC  n.a. / n.a.

a) The fire-resistance rating is based on a span of 12 feet and on a uniform load of 80 psf.

- TWO-LAYER ELASTOMERIC MEMBRANE ROOFING
- ROOFING UNDERLAY (UP TO THE DESIGNER)
- 2 ROWS OF POLYSOCYANURATE INSULATION 3-1/2 in. EA.
- VAPOR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.
- FURRING CHANNELS 5/8 in. @ 16 in. O.C.
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating
FRR (a) 1 h

Thermal resistance
RSI / R 7.9 / 45

Acoustic ratings
STC / FSTC n.a. / n.a.
IIC / FIIC n.a. / n.a.

a) The fire-resistance rating is based on a span of 12 feet and on a uniform load of 80 psf.

- THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE ROOFING
- ROOFING UNDERLAY (UP TO THE DESIGNER)
- 2 ROWS OF POLYISOCYANURATE INSULATION 3-1/2 in. EA.
- VAPOR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.
<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR((a))</th>
<th>1.5 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>8.2 / 47</td>
</tr>
<tr>
<td>Acoustic ratings</td>
<td>STC / FSTC</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td></td>
<td>IIC / FIIC</td>
<td>n.a. / n.a.</td>
</tr>
</tbody>
</table>

(a) The fire-resistance rating is based on a span of 12 feet and on a uniform load of 80 psf.

- THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE ROOFING
- ROOFING UNDERLAY (UP TO THE DESIGNER)
- 2 ROWS OF POLYISOCYANURATE INSULATION 3-1/2 in. EA.
- VAPOR BARRIER MEMBRANE
- NORDIC X-LAM 4-1/8 in.
- FURRING CHANNELS 5/8 in. @ 16 in. O.C.
- 1 TYPE X GYPSUM BOARD 5/8 in.
<table>
<thead>
<tr>
<th>Fire-resistance rating</th>
<th>FRR (a)</th>
<th>1.5 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal resistance</td>
<td>RSI / R</td>
<td>7.5 / 43</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>STC / FSTC</td>
</tr>
<tr>
<td>IIC / FIIC</td>
</tr>
</tbody>
</table>

(a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- TWO-LAYER ELASTOMERIC MEMBRANE ROOFING
- ROOFING UNDERLAY (UP TO THE DESIGNER)
- 2 ROWS OF POLYISOCYANURATE INSULATION 3 in. EA.
- VAPOR BARRIER MEMBRANE
- NORDIC X-LAM 6-7/8 in.
**Fire-resistance rating**

| FRR (a) | 2 h |

**Thermal resistance**

| RSI / R | 7.7 / 44 |

**Acoustic ratings**

| STC / FSTC | n.a. / n.a. |
| IIC / FIIC | n.a. / n.a. |

(a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- TWO-LAYER ELASTOMERIC MEMBRANE ROOFING
- ROOFING UNDERLAY (UP TO THE DESIGNER)
- 2 ROWS OF POLYISOCYANURATE INSULATION 3 in. EA.
- VAPOR BARRIER MEMBRANE
- NORDIC X-LAM 6-7/8 in.
- FURRING CHANNELS 5/8 in. @ 16 in. O.C.
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating \( \text{FRR}^{(a)} \)  |  2 \( \text{h} \)
--- | ---
Thermal resistance \( \text{RSI} / \text{R} \)  |  7.7 / 44
--- | ---
Acoustic ratings \( \text{STC} / \text{FSTC} \)  |  n.a. / n.a.
\( \text{IIC} / \text{FIIC} \)  |  n.a. / n.a.

\( ^{a} \) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- TWO-LAYER ELASTOMERIC MEMBRANE ROOFING
- ROOFING UNDERLAY (UP TO THE DESIGNER)
- 2 ROWS OF POLYISOCYANURATE INSULATION 3 in. EA.
- VAPOR BARRIER MEMBRANE
- NORDIC X-LAM 6-7/8 in.
- SUSPENDED CEILING:
  - METALLIC HANGERS 5-3/4 in.
  - CHANNEL IRONS 1-1/2 in. @ 48 in. O.C.
  - FURRING CHANNELS 7/8 in. @ 16 in. O.C.
  - SOUNDPROOFING MATERIAL 3-5/8 in.
- 1 TYPE X GYPSUM BOARD 5/8 in.
Fire-resistance rating  | FRR (a)  | 1.5 h
Thermal resistance  | RSI / R  | 7.5 / 43
Acoustic ratings  | STC / FSTC  | n.a. / n.a.
                 | IIC / FIIC  | n.a. / n.a.

a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE ROOFING
- ROOFING UNDERLAY (UP TO THE DESIGNER)
- 2 ROWS OF POLYISOCYANURATE INSULATION 3 in. EA.
- VAPOR BARRIER MEMBRANE
- NORDIC X-LAM 6-7/8 in.
Fire-resistance rating | FRR (a) | 2 h
---|---|---
Thermal resistance | RSI / R | 7.7 / 44
Acoustic ratings | STC / FSTC | n.a. / n.a.
| IIC / FIIC | n.a. / n.a.

(a) The fire-resistance rating is based on a span of 18 feet and on a uniform load of 90 psf.

- THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE ROOFING
- ROOFING UNDERLAY (UP TO THE DESIGNER)
- 2 ROWS OF POLYISOCYANURATE INSULATION 3 in. EA.
- VAPOR BARRIER MEMBRANE
- NORDIC X-LAM 6-7/8 in.
- FURRING CHANNELS 5/8 in. @ 16 in. O.C.
- 1 TYPE X GYPSUM BOARD 5/8 in.
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<th>FRR (a)</th>
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<td>7.8 / 44</td>
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<tr>
<td>Acoustic ratings</td>
<td>STC / FSTC</td>
<td>n.a. / n.a.</td>
</tr>
<tr>
<td></td>
<td>IIC / FIIC</td>
<td>n.a. / n.a.</td>
</tr>
</tbody>
</table>

a) The fire-resistance rating is based on a span of 12 feet and on a uniform load of 90 psf.

- TWO-LAYER ELASTOMERIC MEMBRANE ROOFING
- ROOFING UNDERLAY (UP TO THE DESIGNER)
- 2 ROWS OF POLYISOCYANURATE INSULATION 3-1/2 in. EA.
- VAPOR BARRIER MEMBRANE
- PLYWOOD 1/2 in.
- NORDIC LAM DECKING 3-1/2 in.