SaferWood
Thermex-FR

COMPLIANCE STATEMENT for CSA O80

In summary, the main CSA O80 Standards for fire retardant treated wood [FRTW] products that pertain to SaferWood with Thermex-FR cover A) Smoke generation (SDI = Smoke Development Index, and B) Flame spread (FSI = Flame Spread Index.)

Lumber and plywood pressure treated with SaferWood Thermex-FR by Chemco, Inc., meets the performance requirements of AWPA U1, Specification H for Use Category UCFB (fire protection, exterior, above ground) and AWPA C20/C27 (Exterior Type), thus satisfying the requirements of the CSA O80-1 standard, UL® Standard 723/ASTM E84, and ULC® Standard S102.

CSA O80

The eleventh edition (2020) of the CSA O80 Series of Standards, *Wood preservation,* is organized in the Use Category System (UCS). The UCS is designed to facilitate selection of the appropriate wood species, preservative, penetration, and retention (loading) by the specifier and user of treated wood by more accurately matching the species, preservative, penetration, and retention for typical moisture conditions and wood biodeterioration agents to the intended end use.

This Series of Standards consists of five Standards. However, minimum requirements for fire retardant treatments are specified in Clause 8.9 of CSA O80.1 and Clause 9.8 of CSA O80.2. The Technical Committee intends that Clause 8.9 of CSA O80.1 and Clause 9.8 of CSA O80.2 will be used to accommodate standardized fire retardant treatments, if any, in future editions of this Series of Standards.

The purpose of this bulletin is to summarize the CSA O80 requirements for SaferWood Thermex-FR fire retardant treated wood products (FRTW). Section 8.9 of CSA O80.1 is the first section in the CSA O80 Standards that references fire-retardant treated products. The pertinent language in this section includes:

8.9 Fire retardant treated products

Notes:

1. This Clause covers the fire retardant treatment of lumber, timber, and plywood using pressure processes. Whereas this Standard specifies exact processing limits

and minimum preservative retentions and penetrations for preservative-treated products, it does not do the same for fire-retardant-treated products.

2. See also Clause 9.8 of CSA O80.2.

8.9.1 Performance rating

The flame-spread and smoke developed classification of fire retardant treated solid sawn products and plywood shall be determined by tests conducted in accordance with CAN/ULC-S102 or CAN/ULC-S102.2. The specifier shall indicate the required classification for the product.

Note: *The published records of recognized fire-testing laboratories may be consulted for flame-spread ratings of solid sawn products and plywood treated in accordance with this Standard. [Visit www.SaferWood.com to view evaluation reports.]*

8.9.2 Plywood

8.9.2.1 General

Plywood shall meet the applicable requirements for exterior grade plywood specified in CSA O121, CSA O151, CSA O153, and ANSI/HPVA HP-1. Panels with lumber core construction should not be treated with fire retardants. The purchaser shall state where the material is to be used and how it will be finished.

8.9.2.2 Moisture content

After treatment, plywood shall be air dried, or kiln dried to a final moisture content that approximates the expected moisture content during use. Waviness, grain raising, or checking resulting from treatment with a water-borne fire retardant shall not be cause for rejection.

8.9.3 Lumber — Moisture content

After treatment, material up to 38 mm (1.50") thick shall be air dried or kiln dried to an average moisture content of 19% or less.

[Note: SaferWood with Thermex-FR can be used on lumber up to 54" inches in diameter. Lengths are only limited by size of kilns.]

Above, in Section 8.9 note 2 of the statement, "See also Clause 9.8 of CSA O80.2" is included. Clause 9.8 is below. The important requirements for FRTW to take note of in 9.8 below are pressure limitations and drying requirements.

9.8 Fire-retardant-treated lumber, timber, and plywood

9.8.1 Treatment

9.8.1.1 General

The following shall not be used in fire retardant treatment:

a) steaming

b) heating in preservative

c) Boulton drying

d) expansion baths

e) final steaming

f) solvent recovery

9.8.1.2 Pressure limitations

The pressure limitations specified in Clause 9.1 (for lumber and timber) and Clause 9.6 (for wood composites) shall apply.

9.8.2 Drying

9.8.2.1 General

After fire retardant treatment, lumber shall be air or kiln dried to a maximum moisture content of 19%, and plywood to 15%. *[Note: reference IBC 2303.2.8]*

The equilibrium moisture content of wood products treated with some fire retardants differs significantly from that of untreated wood products. Measurement using

resistance-type moisture meters is affected by the presence of the fire retardant compounds. Accordingly, users of a fire-retardant-treated product shall contact the manufacturer for recommended procedures and/or correction factors for moisture content measurements.

9.8.2.2 Air drying

~~When air drying is used, material shall not be exposed to conditions that cause fire retardant leaching.~~ *[Note: SaferWood with Thermex-FR is KDAT.]*

9.8.2.3 Kiln drying of interior fire retardants

~~During kiln drying of lumber or plywood after treatment with interior fire retardant formulations, the dry bulb temperature of the kiln shall not exceed 71°C.~~

*[Note**:** SaferWood is an exterior-rated fire retardant; therefore, the above statement does not apply. For wood kiln-dried after treatment (KDAT), the kiln temperatures shall not exceed those used in kiln drying the lumber and plywood submitted for the tests described in IBC Section 2303.2.5.1 for plywood and 2303.2.5.2 for lumber.]*

In 9.8.1.2 of Section 9.8 above, it indicates that pressure limitations are specified in Clauses 9.1 (for lumber and timber) and Clause 9.6 (for wood composites – including plywood). Applicable language from Clauses 9.1 and 9.6 are included below to show the pressure limitations.

9.1.4.2 Maximum pressures

The following pressures shall not be exceeded:

a. Eastern White, Jack, Lodgepole, Ponderosa, Red, and Southern Pine: 1250 kPa (181 psi)
b. Hem-Fir, Hem-Fir North, and Eastern and Western Hemlock: 1250 kPa (180 psi)
c. Eastern & Western Spruce-Pine-Fir, and Engelmann & Western White Spruce: 1040 kPa (150 psi)
d. Coastal Douglas fir: 1040 kPa (150 psi)
e. Western Larch: 1040 kPa (150 psi)
f. Western Red Cedar and Yellow Cypress: 1040 kPa (150 psi)
g. Beech, Birch, and Maple: 1200 kPa (174 psi)
h. Oak: 1720 kPa (249 psi)

9.6 Wood composites

Note:

1. This Clause applies to pressure-treated plywood and structural glued-laminated timber.

9.6.3.2 Maximum pressure

The maximum pressure used for treating assembled members shall not exceed 1040 kPa (150 psi).