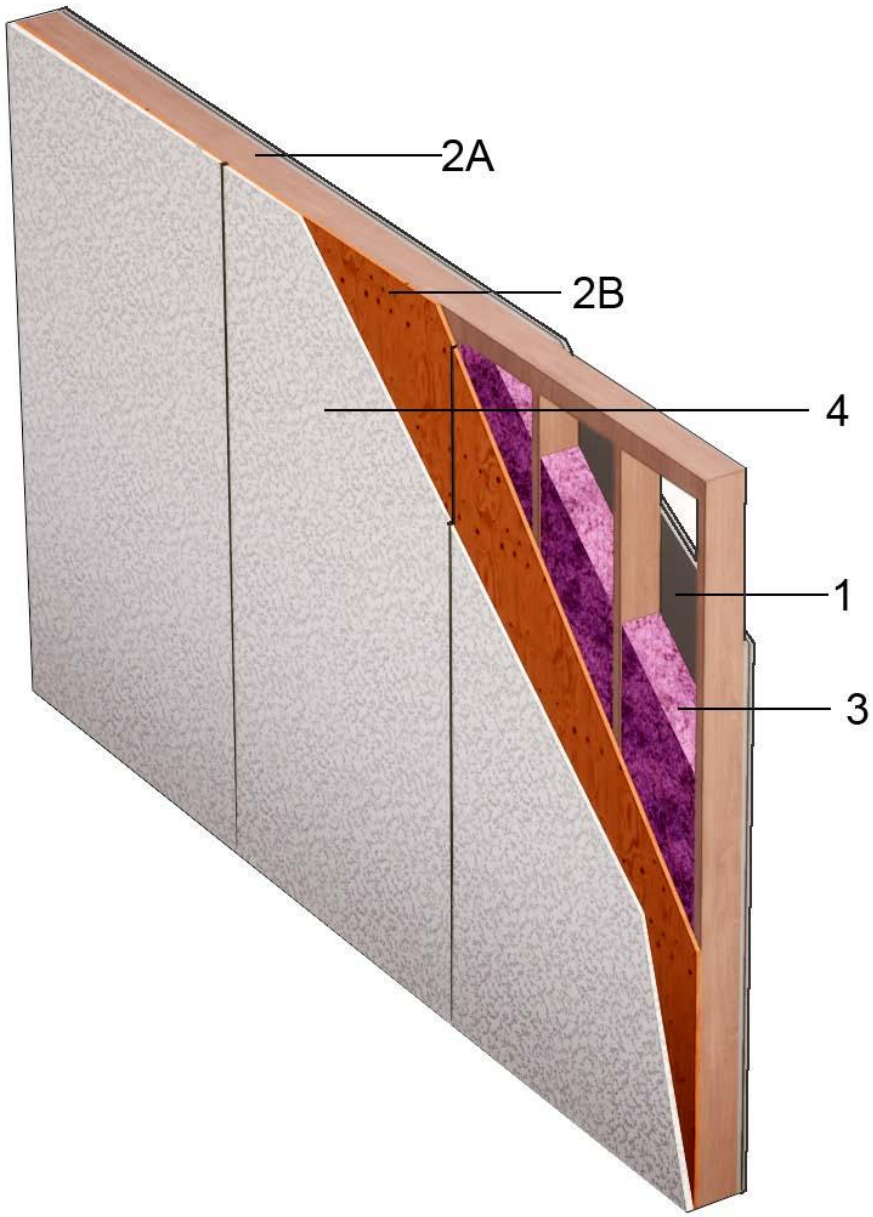
QAI Design B1093-1b –Chicago Flameproof & Wood Specialties Corporation FlameTech™ Fire Retardant Treated Lumber and Plywood CAN/ULC-S101/ASTM E119 – 2-Hour Load Bearing Fire-Resistance Rated Wall Assemblies[1]

Note 1: See details below for assembly construction requirements required for orientation of fire-resistance rating required.



Load Bearing is Determined Based on National Design Specification for Wood Construction, Allowable Stress Design (ASD) Method with Reduction Factors Below to be Followed:

PROPERTY	DF	SPF	SYP	OTHER SPECIES
Compression parallel to grain, F_{cII}	0.96	0.95	0.96	0.95

Jurisdictions adopting Limit States Design or Load Resistance Factor Design are to have the equivalent load calculated accordingly.

FLAMETECH™ 2-HOUR LOAD BEARING, INTERIOR EXPOSED TO FIRE

NUMBER	PART	DESCRIPTION	
1[2]	Interior Gypsum	Type:	USG Firecode C Type X complying with ASTM C1396 listed by an approved agency.
		Thickness:	2 layers, minimum 5/8-inches (16 mm).
		Fasteners:	Base layer is to be anchored with minimum #6 1-5/8 inch (41 mm) length coarse thread drywall screw spaced at 6 inches (152 mm) on center (OC). Face layer to be anchored with #6 2 inch (52 mm) length coarse thread drywall screw spaced at 8 inches (204 mm) OC.
		Joints:	Joints to be tapped and mudded with joint compound.
		Installation:	Gypsum to be oriented vertically. Joints are to be offset minimum 24 inches (610 mm) between base and face gypsum layers.
2[2]	a. Fire Retardant Treated Lumber	Type:	FlameTech™ fire retardant treated lumber softwood.
		Minimum Size:	2 inch x 4 inch nominal (38 mm x 89 mm).
		Maximum Spacing:	16 inches (406 mm) on center maximum.
		Installation:	FlameTech™ fire retardant treated lumber is to be installed into a double top (cap) plate, and single bottom (sill) plate per applicable code. Blocking is to be applied at FlameTech™ plywood joints.
	b. FlameTech™ Fire Retardant Treated Plywood	Type:	FlameTech™ fire retardant treated plywood.
		Minimum Size:	15/32 inches (12 mm) thickness.
		Fasteners:	Minimum 2-3/8 inches (60 mm) length 8D nails, spaced 8 inches (204 mm) on center around perimeter and in the field.
		Installation:	FlameTech™ fire retardant treated plywood is installed vertically.
3[2]	Insulation	Type:	Fiberglass or Mineral Wool.
		Thickness.	2 x 4 Lumber: 3-1/2 (89 mm), sized to fit stud cavity (min. R-13). For greater stud depths, insulation to be sized to fit cavity.
		Installation:	Friction fit to stud cavity, with insulation compressed to ensure no gaps at insulation joints.
5	OPTIONAL Exterior Cladding (Not Shown)	Type:	Masonry brick veneer, concrete or manufactured stone. Fiber-cement. Stucco or Exterior Insulating Finish Systems (EIFS) Wood based. Metal siding. Vinyl Siding. All Claddings noted above are to be installed with a code approved weather barrier and fastening in accordance with the applicable codes and approved by the authority having jurisdiction.

FLAMETECH™ 2-HOUR LOAD BEARING INTERIOR EXPOSURED TO FIRE
1-HOUR LOAD BEARING EXTERIOR EXPOSED TO FIRE

NUMBER	PART	DESCRIPTION	
1[2]	Interior Gypsum	Type:	USG Firecode C Type X complying with ASTM C1396 listed by an approved agency.
		Thickness:	2 layers, minimum 5/8-inches (16 mm).
		Fasteners:	Base layer is to be anchored with minimum #6 1-5/8 inch (41 mm) length coarse thread drywall screw spaced at 6 inches (152 mm) on center (OC). Face layer to be anchored with #6 2 inch (52 mm) length coarse thread drywall screw spaced at 8 inches (204 mm) OC.
		Joints:	Joints to be tapped and mudded with joint compound.
		Installation:	Gypsum to be oriented vertically. Joints are to be offset minimum 24 inches (610 mm) between base and face gypsum layers.
2[2]	a. Fire Retardant Treated Lumber	Type:	FlameTech™ fire retardant treated lumber softwood.
		Minimum Size:	2 inch x 4 inch nominal (38 mm x 89 mm).
		Maximum Spacing:	16 inches (406 mm) on center maximum.
		Installation:	FlameTech™ fire retardant treated lumber is to be installed into a double top (cap) plate, and single bottom (sill) plate per applicable code. Blocking is to be applied at FlameTech™ plywood joints.
	b. FlameTech™ Fire Retardant Treated Plywood	Type:	FlameTech™ fire retardant treated plywood.
		Minimum Size:	15/32 inches (12 mm) thickness.
		Fasteners:	Minimum 2-3/8 inches (60 mm) length 8D nails, spaced 8 inches (204 mm) on center around perimeter and in the field.
		Installation:	FlameTech™ fire retardant treated plywood is installed vertically.
3[2]	Insulation	Type:	Fiberglass or Mineral Wool.
		Thickness.	2 x 4 Lumber: 3-1/2 (89 mm), sized to fit stud cavity (min. R-13). For greater stud depths, insulation to be sized to fit cavity.
		Installation:	Friction fit to stud cavity, with insulation compressed to ensure no gaps at insulation joints.
4[3]	Exterior Gypsum	Type:	Type X complying with ASTM C1396 listed by an approved agency. Installation can be done either side of 2b) component listed. Installation of gypsum to follow ASTM C840 or CSA A82.31, as appropriate.
	Plaster	Type:	¾ inch thickness cement plaster, composed of 1:4 for scratch coat, 1:5 for brown coat by volume cement to sand. Plaster is applied to metal lath, anchored with 6D common nails at 7 inches (177 mm) on center spacing, with 1 inch (25 mm) penetration depth.
	Brick	Type:	2.7 inch (69 mm) thickness solid brick or 2.3 inch (58 mm) hollow brick, anchored to structure to resist anticipated service loads in accordance with the applicable codes as approved by the Authority Having Jurisdiction.
5	OPTIONAL Exterior Cladding (Not Shown)	Type:	Masonry brick veneer, concrete or manufactured stone. Fiber-cement. Stucco or Exterior Insulating Finish Systems (EIFS) Wood based. Metal siding. Vinyl Siding. All Claddings noted above are to be installed with a code approved weather barrier and fastening in accordance with the applicable codes and approved by the authority having jurisdiction.

Note 2: Components are required for maintaining interior fire-resistance rating only. Where exterior exposure fire-resistance rating is required, Component Number 4 per Note 3 below are required.
Note 3: Component Number 4 is required where exterior exposure fire-resistance rating is sought.