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Legacy report on the 2000 International Building Code®, the 2000 International Residential Code™, the 2002 Accumulative Supplement to the International Codes™, the BOCA® National Building Code/1999, the 1999 Standard Building Code®, the 1997 Uniform Building Code™, and the 1998 International One and Two Family Dwelling Code®

DIVISION 06 - WOOD AND PLASTIC
Section 06170 - Prefabricated Structural Wood

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ADDITIONAL LISTEE:

RealPost™ Columns

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1.0 SUBJECT

QuattroPost™ Columns

2.0 PROPERTY FOR WHICH EVALUATION IS SOUGHT

Structural

3.0 DESCRIPTION

3.1 General

QuattroPost™ columns are an appearance grade kiln-dried, engineered column. All columns are manufactured by laminating graded kiln dried Spruce-Pine-Fir (SPF) Select Structural, SPF No. 2, Douglas Fir (DF) Select Structural, DF No. 2 lumber, or Western Red Cedar. The sizes range from 4inch by 4 inch to 8 inch by 8 inch square columns in one inch increments.

The service conditions for the QuattroPost(tm) columns described in this report shall be a covered, dry condition of use (dry conditions of use are those conditions of use represented by sawn lumber at which the moisture content is less than 16 percent). The columns, where exposed to weather, shall be properly protected by a roof, eave or similar covering to avoid wetting of the columns and assure dry service conditions. They are also used for both loadbearing and nonloadbearing on buildings of combustible construction.

Structural load bearing columns are limited to the sizes and lengths shown in Table 1. Non-load bearing columns may be any size and length produced. Column caps and bases are available in various styles. Dimensions of columns are shown in the manufacturer's literature.

3.2 Structural

The QuattroPost™ columns were tested for structural gravity loads applied axial. Allowable design capacities of the columns with concentric and eccentric load conditions were determined. Allowable design loads for axial capacity and maximum eccentricity are shown in Table 1.

3.3 Quality Assurance

Quality assurance is provide by Canadian Plywood Association, North Vancouver, B.C. Canada.

4.0 INSTALLATION

4.1 General

QuattroPost™ Columns are installed in accordance with the manufacturer's published installation instructions and this report.

The manufacturer's published installation instructions and this report shall be strictly adhered to and a copy of these instructions shall be available at all times on the job site during installation.

The instructions within this report govern if there are any conflicts between the manufacturer's instructions and this report.

4.2 Structural Load Bearing Columns

Structural load bearing columns are limited to the sizes and lengths shown in Table 1 below. The columns resist gravity loads only.

Design loads shall be determined using Chapter 16 of the Standard Building Code© and shall not exceed the loads shown in Table 1 below. The design values are applicable for temperatures not exceeding 130°F. The columns shall be designed to resist gravity axial loads only and shall not be designed to resist wind uplift, transverse or bending moment loads.

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Structural design calculations and details for specific applications are furnished to the code official to verify compliance with this report and the applicable code, when requested.

4.3 Non-Load Bearing Columns

QuattroPost™ Columns may be installed as non-load bearing columns. Non-load bearing columns may be any size and length produced for architectural appearance around structural supports.

5.0 IDENTIFICATION

Each QuattroPost™ Column described in this report shall be identified by a stamp or label bearing the manufacturer's name and/or trademark, the species/grade, and the ICC-ES legacy report number for field identification, and the name and trademark of the quality assurance agency (Canadian Plywood Association, NER-QA462).

6.0 EVIDENCE SUBMITTED

- 6.1** Manufacturer's descriptive literature, published installation instructions, specifications, architectural details.
- 6.2** Quality assurance manual, dated December 9, 2003, signed by Mark Pickering and D. M. Black.
- 6.3** Full size flexural testing of QuattroPosts in accordance with ASTM D 198 -99, D 2915-98 and D 4761-02, Report No. 0310D-1, dated November 28, 2003, and signed by Dale M. Black A.Sc.T, and Keith M. Iwasaki, B.Sc.F.
- 6.4** Flexural and Tension testing of QuattroPosts finger joints in accordance with AITC 200-92, ASTM D 198-99, and D 4761-02, Report No. 0310D-2, dated November 28, 2003, and signed by Dale M. Black A.Sc.T, and Keith M. Iwasaki, B.Sc.F.
- 6.5** Compression and delamination testing of QuattroPosts in accordance with ANSI/ATC A190.1-1992 ASTM D 198-99, D 2915-98 and D 4761-96/4761-02, Report No. 0210A-1, dated December 20, 2002, and re-issued November 28, 2003, and signed by Dale M. Black A.Sc.T, and Keith M. Iwasaki, B.Sc.F.
- 6.6** Technical Report on Qualification Testing and Establishing of Structural Capacities of The Synergy Pacific Wood Solutions ULC Engineered QuattroPost™ Columns, signed and sealed by Meho Karalic, P.Eng.:
- Phase A: Pivot size 6"x6" on SPF-SS, SPF-N2, DF-SS and DF-N2; Allowable Stress Design Format; June 2002;
 - Phase A: Pivot size 6"x6" on Western Red Cedar Select Structural; Allowable Stress Design Format; July 2002;
 - Volume A: Column Size 6"x6" on SPF-SS, SPF-N2, DF-SS and DF-N2; Allowable Stress Design Format; December 2002;
 - Volume B: Column Sizes 4"x4" and 8"x8" on SPF-SS, SPF-N2, DF-SS and DF-N2; Evaluation of the volume effect; Allowable Stress Design Format; December 2002;
 - Volume C: Allowable Column Loads for Column Sizes 4"x4", 6"x6" and 8"x8" on SPF-SS, SPF-N2, DF-SS and DF-N2; Allowable Stress Design Format; December 2002;

- Volume D: Column Size 6"x6" on Western Red Cedar; Allowable Stress Design Format; December 2002;
- Volume E: Testing and Development of Bending Properties of QuattroPost™ Columns and Lamina Required for Development of Load Tables for QuattroPost™ Columns Loaded with a Small Eccentricity Load on SPF-SS, SPF-N2, DF-SS, DF-N2 and Western Red Cedar; Allowable Stress Design Format; October 2003;
- Volume F: Allowable Column Load for SPF-SS, SPF-N2, DF-SS, DF-N2 and Western Red Cedar on Column Sizes 4"x4", 6"x6" and 8"x8" Load applied with small eccentricity; Allowable Stress Design Format; September 2003;

7.0 CONDITIONS OF USE

The ICC-ES Subcommittee for the National Evaluation Service finds that QuattroPost™ Columns as described in this report conform with or is a suitable alternate to that specified in the 2000 *International Building Code*®, the 2000 *International Residential Code*™, the 2002 *Accumulative Supplement to the International Codes*™, the BOCA® *National Building Code/1999*, the 1999 *Standard Building Code*®, the 1997 *Uniform Building Code*™, and the 1998 *International One and Two Family Dwelling Code*®, subject to the following conditions:

- 7.1** This Evaluation Report and the installation instructions, when required by the code official, shall be submitted at the time of permit application.
- 7.2** The columns shall only be installed on buildings of combustible construction.
- 7.3** Structural design of the columns shall be in accordance with Section 4.2 above.
- 7.4** The use of these columns in wet service conditions or weathered conditions is beyond the scope of this report.
- 7.5** The use of these columns in fire assemblies is beyond the scope of this report.
- 7.6** The use of these columns in termite and decay resistance areas is beyond the scope of this report.
- 7.7** This report is subject to periodic re-examination. For information on the current status of this report, consult the ICC-ES website.

**TABLE 1
ALLOWABLE AXIAL LOADS
QuattroPost™ COLUMNS**

WRC - Western Red Cedar						
Column Length	6 x 6 - Select Structural (5-1/2 x 5-1/2)					
	100%	115%	125%			
4'	12891	14648	15820			
6'	11641	13086	14038			
8'	10313	11406	12100			
10'	8579	9297	9741			
12'	7007	7477	7751			
14'	5734	6042	6226			
16'	4717	4941	5076			
18'	3937	4102	4196			
20'	3330	3452	3521			

Footnotes on page 5.

TABLE 1 - ALLOWABLE AXIAL LOADS (Continued)

DF - Douglas Fir						
Column Length	4 x 4 - Select Structural (3-1/2 x 3-1/2)			4 x 4 - No. 2 (3-1/2 x 3-1/2)		
	100%	115%	125%	100%	115%	125%
4'	9141	10156	10781	8340	9277	9863
6'	6733	7227	7500	6287	6758	7070
8'	4785	5024	5161	4565	4819	4956
10'	3442	3574	3652	3320	3457	3538
12'	2576	2661	2708	2502	2588	2640
14'	1990	2045	2075	1947	2007	2039
16'	1581	1621	1640	1555	1595	1617
18'	1285	1312	1328	1270	1299	1318
20'	1064	1083	1094	1055	1077	1089
Column Length	6 x 6 - Select Structural (5-1/2 x 5-1/2)			6 x 6 - No. 2 (5-1/2 x 5-1/2)		
	100%	115%	125%	100%	115%	125%
4'	17700	20117	21719	15723	17910	19336
6'	15723	17656	18921	14038	15820	16968
8'	13733	15156	16094	12390	13770	14629
10'	11484	12451	13047	10547	11536	12100
12'	9473	10107	10498	8838	9521	9888
14'	7793	8237	8477	7383	7813	8086
16'	6484	6797	6982	6195	6519	6714
18'	5463	5691	5820	5247	5488	5625
20'	4639	4819	4913	4492	4683	4785
Column Length	8 x 8 - Select Structural (7-1/4 x 7-1/4)			8 x 8 - No. 2 (7-1/4 x 7-1/4)		
	100%	115%	125%	100%	115%	125%
4'	24336	27813	30215	21406	24531	26563
6'	22461	25586	27588	19775	22500	24336
8'	20703	23379	25146	18281	20703	22217
10'	18516	20645	22031	16543	18555	19844
12'	16479	18164	19219	14893	16543	17578

Footnotes on page 5.

TABLE 1 - ALLOWABLE AXIAL LOADS (Continued)

SPF - Spruce-Pine-Fir						
Column Length	4 x 4 - Select Structural (3-1/2 x 3-1/2)			4 x 4 - No. 2 (3-1/2 x 3-1/2)		
	100%	115%	125%	100%	115%	125%
4'	8392	9297	9888	7041	7861	8359
6'	6104	6523	6768	5219	5605	5829
8'	4224	4419	4529	3677	3857	3965
10'	2988	3093	3154	2623	2724	2777
12'	2203	2266	2299	1938	2000	2031
14'	1678	1718	1743	1480	1520	1541
16'	1318	1346	1361	1165	1190	1205
18'	1060	1077	1089	936	955	965
20'	867	880	889	769	781	789
Column Length	6 x 6 - Select Structural (5-1/2 x 5-1/2)			6 x 6 - No. 2 (5-1/2 x 5-1/2)		
	100%	115%	125%	100%	115%	125%
4'	16602	18867	20371	13672	15503	16719
6'	14746	16479	17578	12109	13574	14526
8'	12549	13721	14424	10391	11426	12085
10'	10156	10840	11250	8516	9141	9521
12'	8101	8545	8789	6866	7263	7500
14'	6519	6797	6973	5542	5811	5977
16'	5310	5503	5625	4546	4730	4846
18'	4395	4531	4614	3770	3906	3984
20'	3674	3784	3845	3162	3264	3326
Column Length	8 x 8 - Select Structural (7-1/4 x 7-1/4)			8 x 8 - No. 2 (7-1/4 x 7-1/4)		
	100%	115%	125%	100%	115%	125%
4'	23379	26719	28906	19004	21719	23516
6'	21719	24658	26523	17656	20098	21602
8'	19897	22266	23828	16211	18184	19531
10'	17578	19414	20605	14355	15918	16875
12'	15313	16602	17344	12578	13721	14375

Table 1 Notes:

1. Allowable loads assume dry use, untreated applications and normal temperatures.
2. Loads shown have been adjusted to accommodate worst-case eccentricity of 0.167 times the column width or thickness. All column loads have been reduced to account for incidental eccentricity due to construction tolerance.
3. Table assumes the effective column length is equal to the actual column length and that the column ends are translation fixed and rotation free.
4. Columns include plain surface only.
5. SI Units conversion; 1 in. = 25.4 mm, 1 ft = 0.3 m, 1 lbf = 4.5 N.