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RESEARCH REPORT: RR 23633
(CSI # 06090)

Expires: July 1, 2007

Attn: John W. Kurtz
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GENERAL APPROVAL - Clerical Modification - International Staple, Nail and Tool Association pneumatic or mechanically driven nails and staples.

DETAILS

International Staple, Nail and Tool Association nails and staples are manufactured under the Trade Names of Accuchoice, Air Nail, BlueLinx, Carpenters' Choice, DeWalt, Dubai Wire, Duo-Fast, Falcon, Fasco, Fasco/Beck, Fas'ners Unlimited, Gerdau Ameristeel Atlas Steel and Wire Location, Golden State, Grip-Rite, Halsteel, Hitachi, ISM, Makita, Master Fasteners, Max USA, Milwaukee, NailPro, Paslode, Porter-Cable, Powers, Prebena, PrimeAir, Senco, Specialty Fasteners, Stanley-Allspecs, Stanley-Bostitch, Stan Tech and Tree Island. The nails and staples are approved for use in diaphragm and shear wall construction and as permitted in the tables herein.

The approval is subject to the following requirements:

1. Approved products shall be contained in a box labeled with any of the above trade names.
2. Where fasteners other than those specified in the Code for diaphragm or shear wall construction or other structural uses are proposed, the fasteners shall be specified on the plans by the design engineer of the building.
3. Staples may not be used in lieu of nails where gypsum wallboard is to be fastened in a fire-rated system.

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DISCUSSION

Clerical modification is to add trade names Milwaukee and Powers.

Tests by approved testing agencies justify the use of these fasteners. In addition, the lateral load carrying capacity of fasteners is determined by the criteria set forth in Handbook 72 of the U.S. Department of Agriculture for wire nails and and the National Design Specifications for stress grade lumber and its fastenings.

This general approval of an equivalent alternate to the Code is only valid whre an engineer and/or inspector of this Department has determined that all conditions of this approval have been met in the project in which it is to be used.

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction which must be approved by Department of Building and Safety Engineers and Inspectors.

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TABLE I
Allowable Loads for Nails and Staples

Fastener	Diameter (in.)	Gage	Penetration req'd into main member for lateral strength (in.)	Allowable Loads (pounds)	
				Lateral Gr. II	Withdrawal per inch of penetration
6d cooler	.0915	13	1	46	23
6d box	.099	12-1/2	1-1/8	52	25
T-nail	.097		1-1/8	52	25
staple	.0625	16	1	52	32
6d casing	.099	12-1/2	1-1/8	52	--
finish T-nail	.097		1-1/8	52	--
6d common	.113	11-1/2	1-1/4	63	29
8d cooler	.113		1-1/4	63	29
8d box	.113		1-1/4	63	29
T-nail	.113		1-1/4	63	29
6d ring shank	.120	11	1-1/4	63	29
6d screw shank	.120		1-1/4	63	29
8d casing	.113	11-1/2	1-1/4	63	--
finish T-nail	.113		1-1/4	63	--
staple	.072	15	1	64	37
10d cooler	.1205	11	1-3/8	69	31
staple	.072	15	1	64	37
10d box	.128	10-1/2	1-1/2	76	33
12d box	.128		1-1/2	76	33
10d casing	.128		1-1/2	76	--
finish T-nail	.128		1-1/2	76	--
8d common	.131	10-1/4	1-1/2	78	34
T-nail	.131		1-1/2	78	34

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TABLE I (continued)
Allowable Loads for Nails and Staples

Fastener	Diameter (in.)	Gage	Penetration req'd into main member for lateral strength (in.)	Allowable Loads (pounds)	
				Lateral Gr. II	Withdrawal per inch of penetration
8d ring shank	.120	11	1-1/2	78	34
8d screw shank	.120		1-1/2	78	34
16d box staple	.1350	10	1-1/2	81	35
10d common	.148	9	1-5/8	94	38
T-nail	.148	9	1-5/8	94	38
10d ring shank	.135	10	1-5/8	94	38
10d screw shank	.135	10	1-5/8	94	38
12d common	.148	9	1-5/8	94	38
16d sinker	.148	9	1-5/8	94	38
12d ring shank	.135	10	1-5/8	94	38
12 screw shank	.135	10	1-5/8	94	38
16d common	.162	8	1-3/4	107	42
16d ring shank	.148	9	1-3/4	107	42
16d screw shank	.148	9	1-3/4	107	42
20d common	.192	6	2-1/8	139	49
30d sinker	.192	6	2-1/8	139	49
20d ring shank	.177	7	2-1/8	139	49
20d screw shank	.177	7	2-1/8	139	49

Notes:

1. The lateral loads are applicable to Douglas Fir-Larch or Southern Pine (Group II Species). The withdrawal values are applicable to Douglas Fir-Larch. For other species, adjustment is required per National Design Specification.
2. Withdrawal loads are applicable when fasteners are inserted perpendicular to grain. The values may be increased up to twice tabulated values by increasing penetration.
3. Staples shall not be utilized for butt furring.
4. Nails, other than those specified in the Code, may be used if the lateral load resistance and the withdrawal resistance are greater than those of the nail substituted. In some instances the poke-thru resistance of the material fastened, penetration and corrosion resistance of the nails are also pertinent.
5. Fasteners shall be galvanized when required by the Code.

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TABLE 3

**Staples for attaching Roof and Wall Covering
(No. 16 gage galvanized staples)**

Material	Minimum O.D. Crown Width (in.)	No. of Staples
Asphalt-composition shingles 36" section	3/4	4
	7/16	6
Wood shingles	7/16	2
Wood shakes	7/16	2
Tin Capping Roof felts 12" apart	7/16	1

Notes:

1. Staples shall be long enough to penetrate the sheathing or 3/4".
2. Staples for asphalt composition shingles shall be driven so that the staple crown bears tightly against the shingle but does not cut into it. The crown shall be installed parallel to the long dimension of the shingle course.
3. Wood shingles and shakes shall be driven so that the staple crown is parallel to butt edge of the shingle.