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RESEARCH REPORT: RR 25973
(CSI # 06 05 23)

Expiration: March 1, 2017
Issued Date: April 1, 2015
Code: 2014 LABC

GENERAL APPROVAL – Renewal - ADST 2, ADST5, and ADG8 Anchor Downs

DETAIL

KC Metals anchor downs are used as wood framing anchorage, such as to connect wood posts to concrete foundations or to connect an upper story wood post to a lower story supporting wood post, in accordance with Section 2305.5 of the 2014 LABC.

1. ADST anchor downs consist of a main structural steel component with pre-punched holes for installation of SDS wood screws, which are provided, used to connect the anchor down to the wood member, and a base plate component that provide a seat for an anchor rod/nut as specified. The body of the ADST2 and ADST5 anchor downs is formed from no. 12 gage galvanized steel. The base plate component of the ADST2 and ADST5 anchor downs is formed from no. 10 gage galvanized steel.
2. ADG8 anchor downs consist of a main structural steel component with pre-punched holes for installation of SDS wood screws, which are provided, used to connect the anchor down to the wood member, and a base plate component that provide a seat for an anchor rod/nut as specified. The body of the ADG8 anchor down is formed from no. 10 gage galvanized steel. The base plate component of the ADG8 anchor downs is formed from no. 7 gage galvanized steel.

The approval is subject to the following conditions:

1. The anchor downs are not approved for use in the anchorage of concrete or masonry walls to flexible diaphragms.
2. Calculations showing compliance with this report must be submitted to plan check division for their approval. The calculations must be prepared, stamped and signed by a California registered design professional.

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3. Allowable loads are shown in Table 1 of this report. For anchor down devices used in wood framed shear walls a 25% reduction of the allowable loads must be applied as required by Section 2305.5 of the 2014 LABC.
4. When using the basic load combinations in accordance with Section 1605.3.1 of the 2014 LABC, the tabulated allowable loads for the anchor downs shall not be increased for wind or earthquake loading. When using the alternate basic load combinations in accordance with Section 1605.3.2 of the 2014 LABC that include wind or earthquake loads, the tabulated allowable loads for the anchor down shall not be increased by 33 1/3 percent, nor shall the alternative basic load combinations be reduced by a factor of 0.75.
5. Anchor bolts used to connect anchor downs to concrete or masonry structural members must be designed. The grade of anchor bolt and anchor bolt embedment and edge distance must be specified by the engineer of record. Wood members shall be checked separately for structural capacity including the effects on the net area of the member.
6. Steel materials shall conform to the specification. Test data verifying the properties of the steel, by the mill or by an approved testing agency, shall be obtained for each shipment. The data shall be kept on file and submitted to the Department upon request.
7. Connections shall be fully detailed and dimensioned on approved plans showing anchor bolt embedment measured below slab/footing or bearing wall cold joint interface. The concrete or masonry footing must be checked to insure that it is capable of resisting the applied load.
8. The anchor downs must be manufactured, identified and installed in accordance the manufacturer's published installation instructions. A copy of the instructions must be available at the jobsite at all times during installation.
9. Third party inspection of the KC Metals anchor downs is performed by Testing Engineers (TA24101).
10. Use of steel anchor downs and the SDS fasteners in contact with preservative or fire-retardant- treated lumber must be in accordance with Section 2304.9.5 of the 2014 LABC.
11. A statement of special inspection shall be prepared by the registered design professional in responsible charge, and submitted to plan check division where required by Section 1704.3 of the 2014 LABC.
12. Special inspections for seismic resistance shall be conducted in accordance with Section 1705.11 (1) of the 2014 LABC.
13. Special inspections for anchor bolts in concrete or masonry shall be conducted in accordance with Section 1705.3 or 1705.4 of the 2014 LABC.

KC Metal Products, Inc.
Re: ADST2, ADST5, and ADG8 Anchor Downs

Table 1:

Allowable Tension Loads for the ADST and ADG Anchor Downs

Model No.	Anchor Downs			Fasteners			Allowable Tension Loads, P _{all} (lbs)	Displacement Δ, @	
	Dimensions, in			Anchor Bolt Dia., in	SDC Screws			Maximum Load	
	H	W	CL		Qty.	Size, in	CD = 1.6	Δ _{all}	Δ _s
ADST2	9 3/8	3	1 3/8	5/8	10	1/4 x 3	4275	0.14	0.23
ADST5	11 3/8	3	1 3/8	5/8	14	1/4 x 3	5895	0.14	0.25
ADG8	15 1/4	3	1 1/4	7/8	22	1/4 x 3	8820	0.08	0.14

Note:

- 1 The wood member must be sized for the load carrying capacity.
- 2 Loads shall not be increased for short-term duration.
- 4 Anchor bolt type, length, and embedment to be specified by designer
- 5 Deflection of anchor bolt must be taken into consideration.

DISCUSSION

This report is in compliance with the 2014 City of Los Angeles Building Code.

The approval is based on tests in accordance with ICC ES Acceptance Criteria for Holdowns (Tie-downs) Attached to Wood Members (AC 155), dated on June 2010 (editorially revised August 2013).

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.

This general approval of an equivalent alternate to the Code is only valid where 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.

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