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Legacy report on the 1997 *Uniform Building Code*™

DIVISION: 03—CONCRETE
Section: 03210—Reinforcing Steel

HRC 100 SERIES T-HEADED BARS

HEADED REINFORCEMENT CORP. (HRC)
11200 CONDOR AVENUE
FOUNTAIN VALLEY, CALIFORNIA 92708

1.0 SUBJECT

HRC 100 Series T-Headed Bars for Concrete Reinforcement.

2.0 DESCRIPTION

2.1 General:

HRC 100 Series T-headed steel bars have steel plate heads friction-welded to one or both ends of a reinforcement bar ("rebar"), and are used as shear reinforcement and for mechanical anchorage of reinforcement in congested details of reinforced concrete structures. HRC 100 Series T-headed bars that are mechanically anchored in concrete are capable of developing the tensile strength of the bar beneath the head without crushing the concrete. This allows the bars to be used as shear reinforcement and as mechanical anchorage, in accordance with Sections 1911.12.3 and 1912.6 of the 1997 *Uniform Building Code*™ (UBC), respectively.

2.2 Materials:

HRC 100 Series T-headed bars consist of deformed rebars with steel plates friction-welded to either one or both ends of the rebar. Dimensions of HRC 100 Series T-headed bars are shown in Table 1. The deformed rebar conforms with ASTM A 706, Grade 60. Plate heads are cut from flats of hot-rolled steel conforming to ASTM A 572, Grade 60, or cold finish steel conforming to ASTM A 108. Friction welding conforms to the approved quality control manual and the American Welding Society's *Recommended Practices for Friction Welding*, ANSI/AWS C6.1-89. Series 100 T-headed bars are manufactured in such a manner as to ensure that the connection of the head to the bar develops in tension which is the lesser of 95 percent of the ultimate tensile strength or 160 percent of the specified minimum yield strength of the bar.

2.3 Design:

Design of the T-headed bars as shear reinforcement and as mechanical anchorage of the reinforcement must comply with Sections 1911.12.3 and 1912.6 of the UBC, respectively.

2.4 Installation:

When shear reinforcement is used to prevent buckling of flexural steel, the heads of the HRC 100 Series T-headed bars must be supported on a crossing rebar. When the shear reinforcement is not used to prevent buckling of flexural steel, or when the T-headed bars are used to mechanically anchor longitudinal steel, no supporting bar under the head is required.

2.5 Identification:

The HRC 100 Series T-headed bars are identified by a label indicating the manufacturer's name (Headed Reinforcement Corp.), rebar size, product model number, evaluation report number (ER-5292), and the name of the inspection agency (Smith-Emery Company).

3.0 EVIDENCE SUBMITTED

Reports of tensile tests, yield point determination tests, bend tests, metallurgical and hardness tests, and static pullout tests of T-headed bars embedded in concrete cylinders; and a quality control manual.

4.0 FINDINGS

That the HRC 100 Series T-Headed Bars for Concrete Reinforcement described in this report comply with the 1997 *Uniform Building Code*™, subject to the following conditions:

- 4.1 Building plans, showing location of the T-headed bars approved by the engineer of record, are submitted to and approved by the building official.**
- 4.2 Use as a mechanical connection for reinforcement is beyond the scope of this evaluation report.**
- 4.3 The T-headed bars are manufactured by Headed Reinforcement Corp. at their manufacturing facility located in Fountain Valley, California, and are under a quality control program administered by Smith-Emery Company (AA-554).**

This report is subject to re-examination in two years.

TABLE 1—DIMENSIONS OF HRC 100 SERIES T-HEADED BARS¹

BAR DIMENSIONS			PLATE HEAD DIMENSIONS ² (inches)							
Bar Size	Diameter (inches)	Area (sq. in.)	A	B	C	D	E	F	G	H
#5	0.625	0.31	2.50	1.25	0.625	2.00	0.50	0.83	1.88	2.00
#6	0.750	0.44	3.00	1.50	0.75	2.25	0.625	0.97	2.36	2.36
#7	0.875	0.60	4.00	1.50	0.75	2.50	0.625	1.08	2.77	2.76
#8	1.000	0.79	4.00	2.00	0.875	3.00	0.75	1.22	2.95	3.17
#9	1.128	1.00	5.00	2.00	0.875	3.25	0.75	1.34	3.35	3.57
#10	1.270	1.27	5.00	2.50	1.00	3.50	0.875	1.50	3.54	4.00
#11	1.410	1.56	6.00	2.50	1.00	4.00	1.00	1.65	3.94	4.46
#14	1.693	2.25	7.50	3.00	1.25	5.00	1.25	2.05	5.08	5.35

For SI: 1 inch = 25.4 mm, 1 sq. in. = 645 mm², 1 foot = 305 mm.

¹Series 100 T-headed bars are available in lengths from 10 inches to 80 feet.

²Plate head dimensions correlate to the dimensions shown in Figure 1.

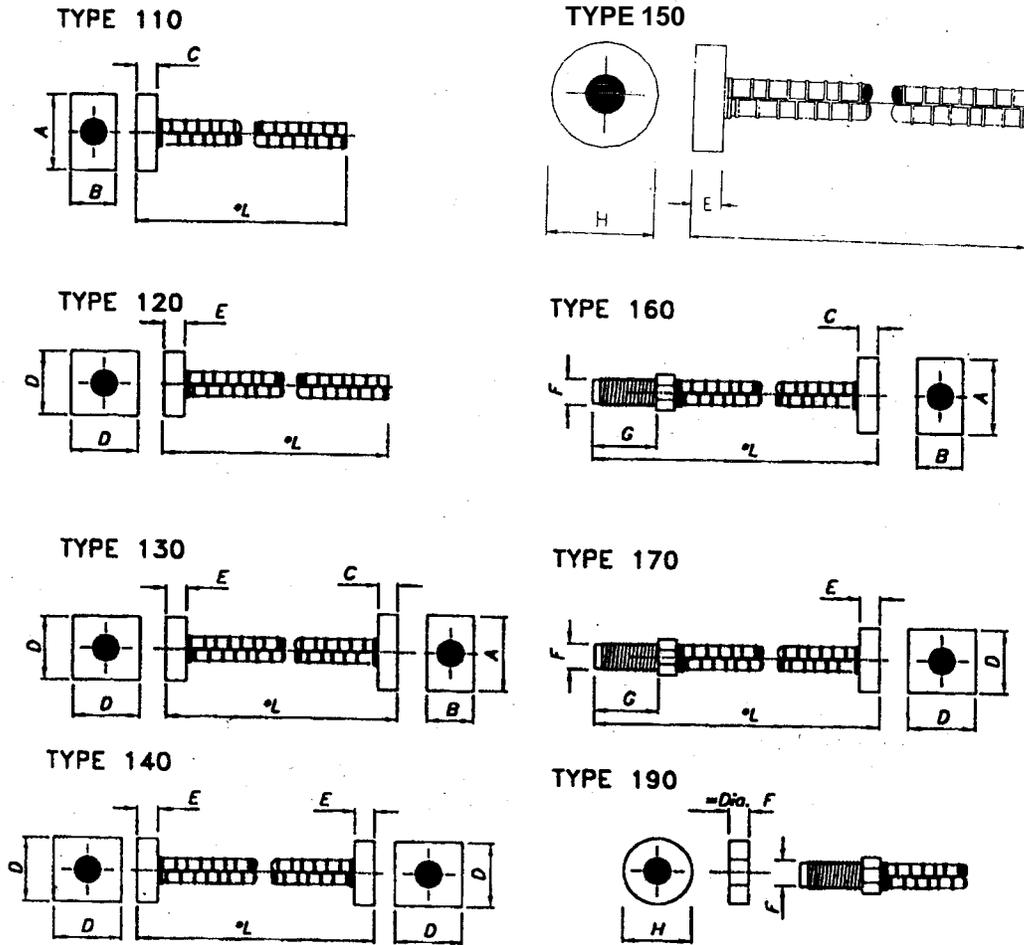


FIGURE 1—DIMENSIONS OF HRC 100 SERIES T-HEADED BARS



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October 31, 2017

Joseph Morente
Headed Reinforcement Corp.
11200 Condor Avenue
Fountain Valley, California 92708

ER-5292
Please reference this number on all
correspondence

Dear Mr. Morente:

You requested information on evaluation report ER-5292. While the re-examination date has passed, this report remains valid and the products covered in the report, according to our records, remain in compliance with the code editions cited in the report. Since we are still in the process of converting ER-5292, we have no official position as to whether the products may comply with more recent code editions.

If you have any questions, please contact me at (800) 423-6587, extension 3307, or by e-mail at mmoody@icc-es.org.

Yours very truly,

A handwritten signature in black ink that reads 'Monique Moody'.

Monique Moody
Senior Account Manager

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