REBAR **SUPPLY**

HRC 555 Series Structural Welding

Development and Anchorage of Reinforcing Bars For Structural Welding Applications

Islandia, New York
Office: (516) 918-8813
Mail: sales@nycrebarsupply.com
www.nycrebarsupply.com

HRC Performance
Local Quality Fabrication

REBAR **SUPPLY**
MBE/WBE Certified

HRC 555 Series Structural Welding

Introduction:

This document has been prepared to showcase how HRC 555 Headed Bars can be used for welded applications such as shear studs, embed plate anchorage, welded dowels, etc.

Background:

Replace Standard Hooks For structural, practical, or economical reasons, the HRC 555 Headed Bars are your problem solver. They allow you to simplify rebar details, reduce congestion, improve concrete consolidation, and lower the in-place costs compared to conventional methods.

Maximize Use of Larger Bar Sizes

Replacing standard hooks with HRC 555 Headed Bar may allow for using fewer, larger bar sizes. This will reduce the number of welds and improve access for efficiency and quality fabrication.

Building Code Compliance

According to ACI 318, HRC 555 Headed Bars have the shortest required development length compared to standard hooks or straight bars. HRC 555 Headed Bars are compliant with ACI 318-19 section 25.4.4, ACI 318-14 section 25.4.4, ACI 318-11 section 12.6, and ASTM A970 Class HA requirements.

Welding specifications are beyond the scope of this document and are to be determined by others as they depend on material, location, and other requirements.

HRC products are designed to meet and exceed the standards referenced in this document, but individual project specifications and quality control requirements still apply. HRC performs tensile testing per ASTM A970 requirements. Tensile tests are conducted daily on finished products as part of HRC quality control.

While HRC does provide QA/QC guidance, HRC is not responsible for material furnished by local fabricators and/or contractors using HRC related equipment or components. Aspects of structural design, evaluation of product fitness for use, suitability, or similar attributes are the responsibility of others.

Why use Welded Headed Bars?

Reduce CongestionCaused by Hooks

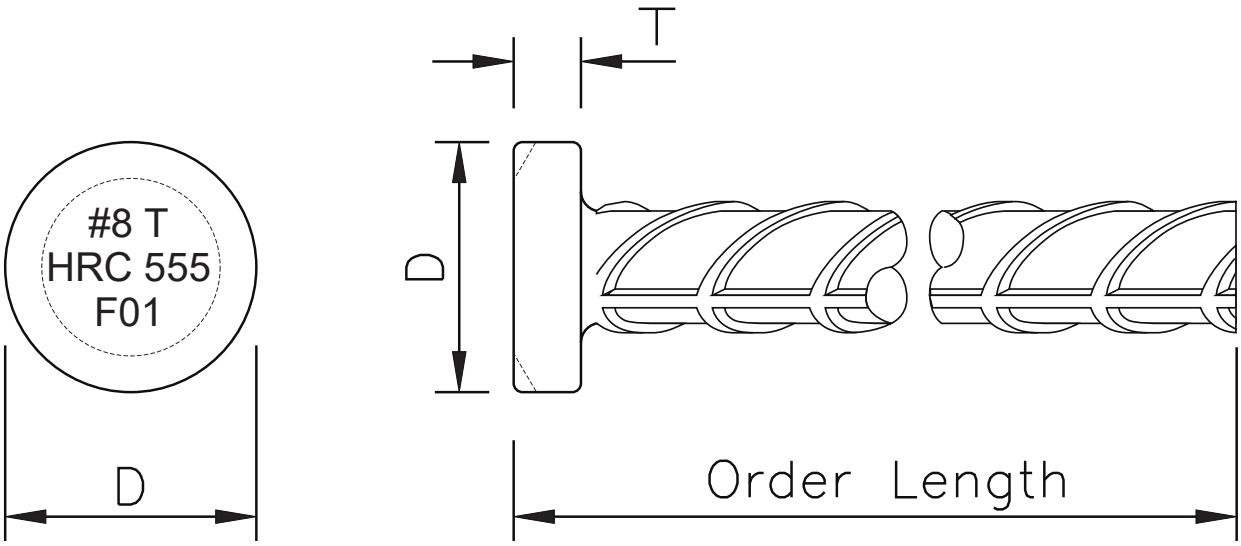
Reduce CongestionCaused by Hooks

Islandia, New York
Office: (516) 918-8813
Mail: sales@nycrebarsupply.com
www.nycrebarsupply.com

HRC Performance
Local Quality Fabrication

REBAR **SUPPLY**
MBE/WBE Certified

HRC 555 Series
Structural Welding



Dimensions of HRC 555 Series Headed Bars

Reinforcing Bars			A706/A615 Grade 60		A706/A615 Grade 80		HRC 555 Dimensions	
Size	Dia [in]	Area [in2]	Yield [lbs]	Tensile [lbs]	Yield [lbs]	Tensile [lbs]	D [in]	* T (min) [in]
#4	0.500	0.20	12,000	16,000	16,000	20,000	1.14	0.25
#5	0.625	0.31	18,600	24,800	24,800	31,000	1.42	0.31
#6	0.750	0.44	26,400	35,200	35,200	44,000	1.69	0.38
#7	0.875	0.60	36,000	48,000	48,000	60,000	1.97	0.44
#8	1.000	0.79	47,400	63,200	63,200	79,000	2.25	0.50
#9	1.128	1.00	60,000	80,000	80,000	100,000	2.56	0.56
#10	1.270	1.27	76,200	101,600	101,600	127,000	2.87	0.64
#11	1.410	1.56	93,600	124,800	124,800	156,000	3.19	0.70
#14	1.693	2.25	135,000	180,000	180,000	225,000	3.82	1.02

* Head thickness should be no larger than the bar diameter.

Quality Control

HRC 555 Headed Bars are produced to meet ASTM A970 with consistent quality and tensile testing at HRC. HRC555 can also be ordered through local approved HRC fabricators who are responsible for their own quality control.

Islandia, New York
Office: (516) 918-8813
Mail: sales@nycrebarsupply.com
www.nycrebarsupply.com

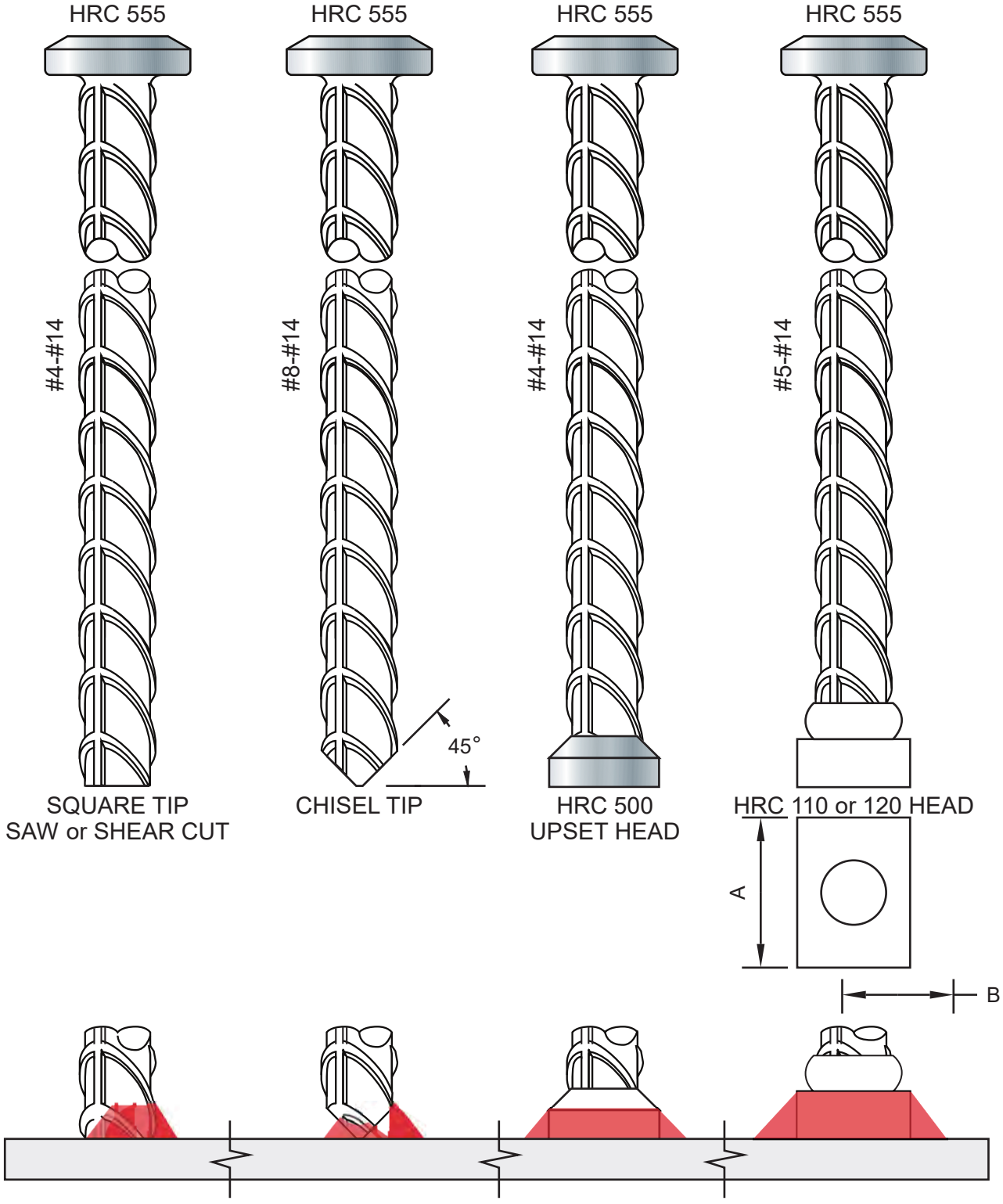
HRC Performance
Local Quality Fabrication

REBAR **SUPPLY**
MBE/WBE Certified

• ***Weldable End Configurations***

HRC 555 Headed Bars are available in a number of end configurations to match your specific welding application - square tip, chisel tip, HRC 500 upset end, and HRC 110 or 120 T-Head.

Weldable Coupler Options Available



Islandia, New York
Office: (516) 918-8813
Mail: sales@nycrebarsupply.com
www.nycrebarsupply.com

HRC Performance
Local Quality Fabrication

REBAR **SUPPLY**
MBE/WBE Certified

When HRC 555 Headed Bars are welded directly to a steel member (square tip, chisel tip or upset head), A706 Grade 60 reinforcing bars are used.

Steel Plate Anchorage

Welded Pile Anchorage

When HRC 555 Headed Bars are welded to a steel member using an HRC 100 series head, the head (plate) is manufactured using C1018 (ASTM A108) or A572-50 (ASTM A576).

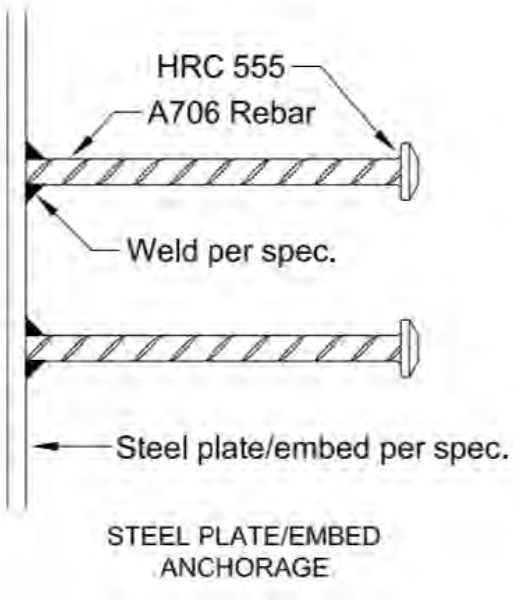
Pile Anchorage (w/ head plate)

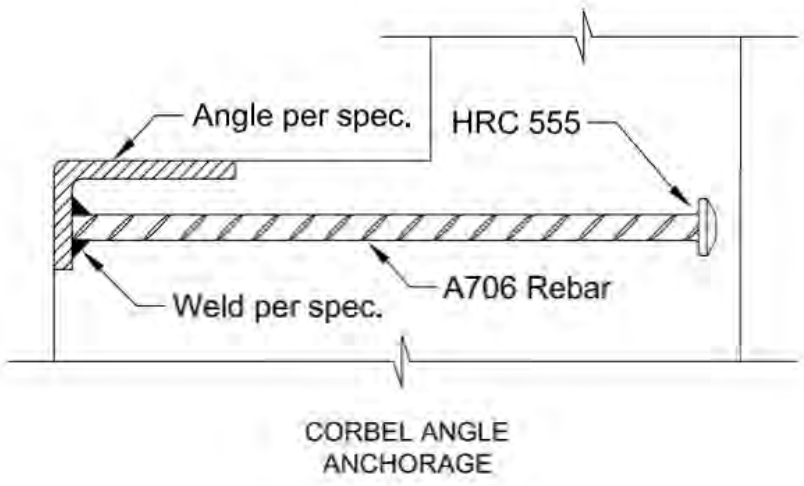
Dowels at Steel Beam/Lintel

Islandia, New York
Office: (516) 918-8813
Mail: sales@nycrebarsupply.com
www.nycrebarsupply.com

HRC Performance
Local Quality Fabrication

REBAR **SUPPLY**
MBE/WBE Certified

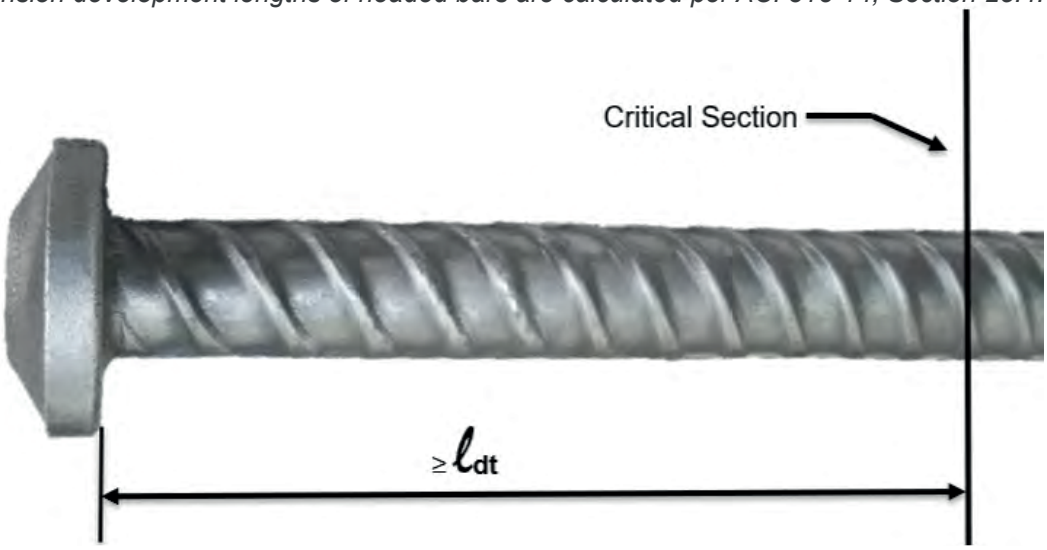




Tension Development Lengths for Uncoated A706/A615 Grade 60 Headed Bars

Bar Size	*f'*c = 3,000 psi	*f'*c = 4,000 psi	*f'*c = 5,000 psi	*f'*c = 6,000 psi
#4	9"	8"	7"	6"
#5	11"	10"	9"	8"
#6	13"	12"	10"	10"
#7	16"	14"	12"	11"
#8	18"	15"	14"	13"
#9	20"	17"	16"	14"
#10	23"	20"	18"	16"
#11	25"	22"	19"	18"

(Tension development lengths of headed bars are calculated per ACI 318-14, Section 25.4.4)



Islandia, New York
Office: (516) 918-8813
Mail: sales@nycrebarsupply.com
www.nycrebarsupply.com

HRC Performance
Local Quality Fabrication

REBAR **SUPPLY**
MBE/WBE Certified

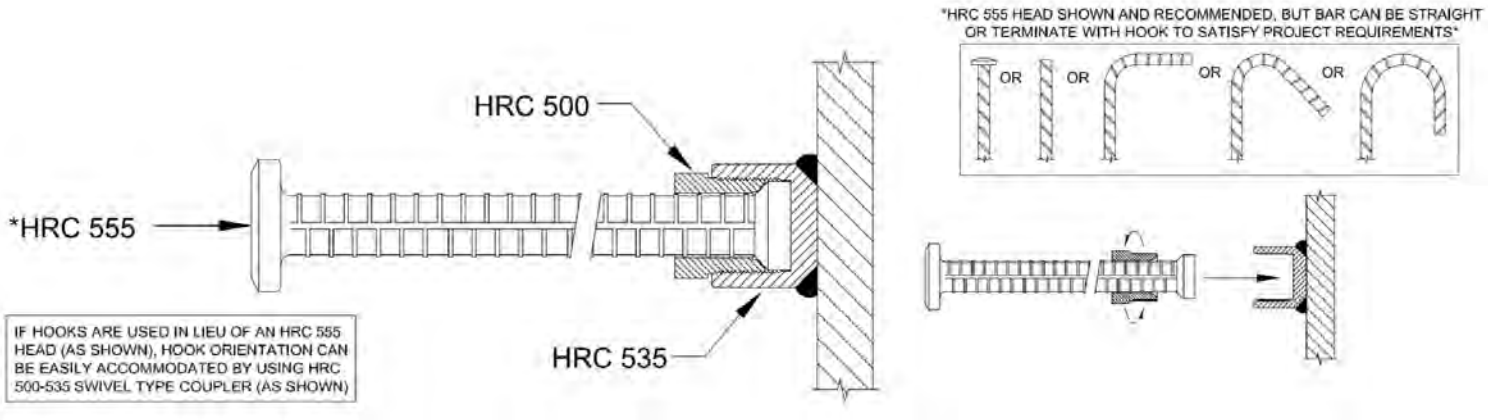
If the design requires an HRC 555 Headed Bar to be welded onto a steel member, but construction operations require a weldable coupler to be installed first and the headed bar to be installed later, there are 2 options to help facilitate this:

Option A – The headed bar assembly has a HRC 555 Head on one end and a HRC 500 upset head + HRC 500 coupler / HRC 535 weldable coupler welded to structural steel.

Installation notes:

1. HRC 535 structural connector will be welded onto a steel member.

2. HRC 555 Headed Bar with HRC 500 coupler will then be threaded into a HRC 535 welded structural connector.

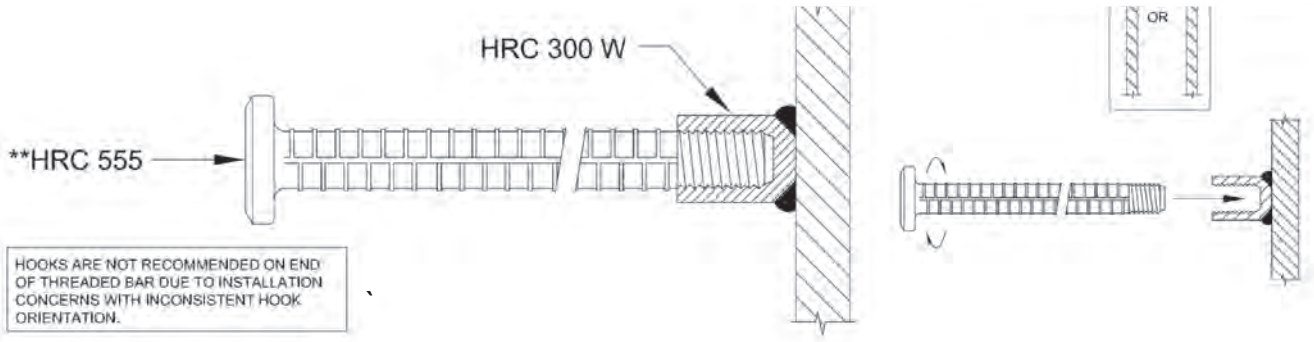


Option B – The headed bar assembly has a HRC 555 Head on one end and a HRC 300 thread + HRC 300 W threaded weldable half coupler on the other end.

Installation notes:

1. HRC 300 W weldable half coupler will be welded onto a steel member.

2. HRC 555 Headed Bar with HRC 300 male thread will then be threaded into a HRC 300 W weldable half coupler.



Islandia, New York
Office: (516) 918-8813
Mail: sales@nycrebarsupply.com
www.nycrebarsupply.com

HRC Performance
Local Quality Fabrication

REBAR **SUPPLY**
MBE/WBE Certified