

September 12, 2017

**RE: The New Red Head C6+ Concrete & Masonry Adhesive Anchor Replaces Epcon C6+**

To Whom It May Concern,

As of September 5<sup>th</sup>, 2017, the new Red Head C6+ is available as a direct replacement for Epcon C6+. The legacy Epcon C6+ will be phased out by Q4 2017.

The new Red Head C6+ is the highest strength adhesive in our history. Designed for use in the most demanding anchoring applications, the maximum strength of Red Head C6+ is backed by ICC-ES approvals for both concrete and masonry. It is also currently the only adhesive approved for core-drilled holes in cracked concrete without the use of a roughening tool.

In addition, Red Head C6+ offers industry leading cure times, allowing end users to install epoxy anchors and apply loads in the same work shift. The new C6+ formula will cure in 6.5 hours at 70°F, and in just 2 hours at 110°F!

Red Head C6+ is considered a direct replacement for Epcon C6+ because it outperforms the bond strength of Epcon C6+ in almost every concrete and masonry application (per each respective ICC-ES report). Attached to this letter are comparison strength-design tables for Red Head C6+ vs. Epcon C6+ in both threaded rod and rebar in the following substrates: uncracked concrete, cracked concrete, and cracked concrete with seismic conditions.

Please visit the below links for more product information:

*Product Website:*

[www.itwredhead.com](http://www.itwredhead.com)

*ICC-ES Concrete Report:*

[http://www.icc-es.org/Reports/pdf\\_files/load\\_file.cfm?file\\_type=pdf&file\\_name=ESR-4046.pdf](http://www.icc-es.org/Reports/pdf_files/load_file.cfm?file_type=pdf&file_name=ESR-4046.pdf)

*ICC-ES Masonry Report:*

[http://www.icc-es.org/Reports/pdf\\_files/load\\_file.cfm?file\\_type=pdf&file\\_name=ESR-4109.pdf](http://www.icc-es.org/Reports/pdf_files/load_file.cfm?file_type=pdf&file_name=ESR-4109.pdf)

*NSF/ANSI 61 Listing for Drinking Water System Components:*

<http://info.nsf.org/Certified/PwsComponents/Listings.asp?Company=C0289596&Standard=061>

*Red Head's Free Anchor Design Software:*

<http://www.itwredhead.com/truspec>

If you have any questions about our Red Head adhesives, please contact our technical support center by calling 1-800-848-5611 or emailing [Technical@itwccna.com](mailto:Technical@itwccna.com).

Sincerely,



Amy Kolczak  
Codes and Approvals Manager  
ITW Commercial Construction North America

**ATTACHED: Red Head C6+ Strength Design comparison tables vs. Epcon C6+**

**Red Head C6+ Threaded Rod Strength Design comparison tables vs. Epcon C6+:**

Threaded Rod in 4000 PSI Concrete		Uncracked Tension (LB)		Cracked Tension (LB)		Cracked & Seismic Tension (LB)	
Anchor Dia. (IN)	Embed. Depth (IN)	Red Head C6+	Epcon C6+	Red Head C6+	Epcon C6+	Red Head C6+	Epcon C6+
<b>3/8</b>	3 3/8	3,510	1,400	1,595	1,190	1,135	890
	4 1/2	4,680	1,865	2,130	1,590	1,515	1,190
	7 1/2	7,265	3,110	3,550	2,650	2,530	1,985
<b>1/2</b>	4 1/2	6,035	2,490	2,840	2,010	2,085	1,505
	6	8,050	3,320	3,790	2,680	2,785	2,010
	10	13,305	5,530	6,315	4,465	4,640	3,350
<b>5/8</b>	5 5/8	9,140	3,890	4,440	2,950	3,195	2,215
	7 1/2	12,185	5,185	5,920	3,935	4,260	2,950
	12 1/2	20,310	8,645	9,870	6,565	7,105	4,920
<b>3/4</b>	6 3/4	10,775	5,600	6,035	4,005	4,345	3,000
	9	14,365	7,470	8,050	5,340	5,795	4,005
	15	23,945	12,450	13,415	8,900	9,660	6,675
<b>7/8</b>	7 7/8	14,140	7,625	8,215	5,080	5,790	3,810
	10 1/2	18,855	10,165	10,955	6,775	7,725	5,080
	17 1/2	31,430	16,945	18,260	11,295	12,875	8,470
<b>1</b>	9	17,830	9,960	10,730	6,195	7,565	4,645
	12	23,775	13,280	14,310	8,260	10,085	6,195
	20	39,625	22,135	23,850	13,770	16,815	10,330
<b>1 1/4</b>	11 1/4	25,790	15,560	18,305	8,240	12,905	6,180
	15	34,390	20,750	24,410	10,990	17,210	8,240
	25	57,315	34,585	40,685	18,315	28,680	13,735

**Footnotes:**

1. Tabulated values are for comparison purposes only and should not be used for design (please use our TruSpec anchorage design software at [www.ITW-redhead.com](http://www.ITW-redhead.com))
2. Tabulated values represent design strength per ACI 318 for a single anchor using ASTM A193 B7 Threaded Rod
3. Assumes adequate concrete thickness, and that the anchor is not near an edge nor near adjacent anchorage
4. Tension strength values include 0.55 or 0.65 reduction factors for dry concrete with periodic inspection, and 0.55 reduction factor for sustained loads – per ACI 318
5. Red Head strength design values are based on 110°F long-term temperature and 142°F short-term temperature, while Epcon C6+ values are based on 110°F long-term and 130°F short-term.
6. Seismic design strength values include a reduction factor of 0.75 per ACI 318

### Red Head C6+ Rebar Strength Design comparison tables vs. Epcon C6+:

Rebar in 4000 PSI Concrete		Uncracked Tension (LB)		Cracked Tension (LB)		Cracked & Seismic Tension (LB)	
Anchor Dia. (IN)	Embed. Depth (IN)	Red Head C6+	Epcon C6+	Red Head C6+	Epcon C6+	Red Head C6+	Epcon C6+
# 3	3 3/8	3,360	1,400	1,595	1,190	1,055	890
	4 1/2	4,480	1,865	2,130	1,590	1,405	1,190
	7 1/2	6,435	3,110	3,550	2,650	2,345	1,985
# 4	4 1/2	5,745	2,490	2,840	2,010	1,875	1,505
	6	7,665	3,320	3,790	2,680	2,500	2,010
	10	11,700	5,530	6,315	4,465	4,165	3,350
# 5	5 5/8	8,605	3,890	4,380	2,950	2,890	2,215
	7 1/2	11,475	5,185	5,840	3,935	3,855	2,950
	12 1/2	18,135	8,645	9,735	6,565	6,425	4,920
# 6	6 3/4	10,030	5,600	5,725	4,005	3,605	3,000
	9	13,370	7,470	7,630	5,340	4,805	4,005
	15	22,290	12,450	12,720	8,900	8,015	6,675
# 7	7 7/8	13,030	7,625	7,465	5,080	4,700	3,810
	10 1/2	17,375	10,165	9,950	6,775	6,270	5,080
	17 1/2	28,955	16,945	16,585	11,295	10,450	8,470
# 8	9	16,205	9,960	9,320	6,195	5,870	4,645
	12	21,610	13,280	12,430	8,260	7,830	6,195
	20	36,015	22,135	20,715	13,770	13,050	10,330
# 9	10 1/8	19,535	n/a	11,255	n/a	7,090	n/a
	13 1/2	26,050	n/a	15,010	n/a	9,455	n/a
	22 1/2	43,415	n/a	25,015	n/a	15,760	n/a
# 10	11 1/4	22,850	15,560	14,430	8,240	10,280	6,180
	15	30,470	20,750	19,240	10,990	13,710	8,240
	25	50,780	34,585	32,070	18,315	22,850	13,735

**Footnotes:**

1. Tabulated values are for comparison purposes only and should not be used for design (please use our TruSpec anchorage design software at [www.itw-redhead.com](http://www.itw-redhead.com))
2. Tabulated values represent design strength per ACI 318 for a single anchor using ASTM A615 Grade 60 Rebar
3. Assumes adequate concrete thickness, and that the anchor is not near an edge nor near adjacent anchorage
4. Tension strength values include 0.55 or 0.65 reduction factors for dry concrete with periodic inspection, and 0.55 reduction factor for sustained loads – per ACI 318
5. Red Head strength design values are based on 110°F long-term temperature and 142°F short-term temperature, while Epcon C6+ values are based on 110°F long-term and 130°F short-term.
6. Seismic design strength values include a reduction factor of 0.75 per ACI 318