Summit Anchor Co.



roof and wall ANCHORSS MANUAL

SAFETY FROM THE TOD DOWN

ANCHOR manual Roof and Wall Safety / Tie-Back Anchors

TABLE OF CONTENTS

Overview
Why Choose Summit Anchor Company Anchors?
Summit's Anchor Co., Signature eyelet Forged - Quenched and Tempered 4
What is Quenching & Tempering? 4
Design and Layout
Design Considerations $\ldots \ldots $
Minimum Loading Requirements for Anchors
Anchor Layout Requirements
Anchor Model Guide
SM-1 Bolt-On Anchors - 4-Holes
SM-81 Bolt-On Anchors - 2-Holes
SM-4 Weld On Anchors
SM-4 Weld On Anchors - 3 Way Intersection
SM-5 Concrete Embed Anchors
SM-6 Concrete - Embed Anchors
SM-85 Concrete - Embed Anchors
SM-1 Bolt-On to CIP-Cage
Application Guide
SM-1 Series Anchors - 4 Bolt Pattern
SM-1 Series Anchors - Custom
SM-4 Series - Weld-On Anchor
SM-5 Series - 4 Stud CIP PAttern Anchor
SM-6 Series - Single Pipe CIP Anchor
SM-81 Series - 2 Bolt Pattern Anchor 26
SM-85 Series - 2 Bolt Pattern Anchor
Various Attachment Details provided by Summit Anchor Co.

United States and Canadian national safety standards

require a building to provide certified anchorages capable of supporting the required loads before any suspended maintenance work is performed.

Roof and wall anchors are the simplest means of ensuring the safety of maintenance contractors who must work on the building's face and avoiding liability.

Roof and wall anchors alone may not satisfy all of the safety requirements of your structure, but when properly designed and installed, they can play a vital role in achieving compliance with OSHA requirements and ANSI/IWCA I-14.1 and CAN/CSA Z91 window cleaning safety standards.

Summit Anchor Company can provide anchorage that will facilitate whatever exterior maintenance might be required on your building. Some common examples of this type of maintenance are:

- Construction
- Window cleaning
- Waterproofing, caulking and facade cleaning
- Facade roof renovations, windows replacement
- · Any interior or exterior maintenance where suspended work must be performed.

Regardless of what mechanical suspension device may be used by your exterior maintenance contractor, ANSI/IWCA I-14.1, section 5.8.22 states that for each suspended worker "anchorage of the lifeline should be independent of any portable support device." One anchorage supports the worker's equipment (i.e. boatswain chair), and another anchorage is used to tie off fall arrest equipment of safety line. OSHA 1910.66 appendix C, section 1 and OSHA 1926.451 (g) contain similar requirements.

Summit Anchor Company can assist you with the design of a suspended maintenance system that complies with OSHA and ANSI/IWCA I-14.1 requirements. By utilizing our expertly engineered anchors, and other equipment, as needed, with a well designed anchor layout roof plan, we provide the highest level of safety for suspended workers.

OSHA REGULATED FALL PROTECTION EDGE DISTANCE GUIDE FOR ACCESSING SUSPENDED ACCESS EQUIPMENT WITH VARIOUS ANCHORAGE APPLICATIONS



While anchorages are fundamental for safe access, building features often require additional equipment to be considered for safe access as follows:

- 1. Hatch Guards
- 2. Skylight and Smoke Hatch Fall Protection
- 3. Guardrails
- 4. Davits
- 5. Horizontal Cable System
- 6. Rigging Sleeves

- 7. Monorails
- 8. Gantries
- 9. Facade, Intermittent Stabilization Anchors (I. S. A.)
- 10. Temporary Rigging such as:
 - a) Counter Weighted Transportable Outriggers
 - b) Parapet Clamps



Why Choose Summit Anchor Company Anchors?

Our anchor eyes are drop forged, resulting in a stronger anchor than the common U-bar type of anchors. According to the Forging Industry Association: "Forgings have to be grain-oriented to shape for greater strength. Machined bar and plate may be susceptible to fatigue and stress corrosion because machining cuts material grain pattern. In most cases, forging yields a grain structure oriented to the part, resulting in optimum strength, ductility, and resistance to impact and fatigue." The additional quench-and tempering process of Summit's anchor eyes ensures consistent performance of each non-stainless steel anchor eye. The heat treatment and cooling process capitalizes on the properties of the steel to create anchor eyes with reduced risk of catastrophic failure due to brittleness and with the toughness to withstand

the critical application involved with suspended maintenance.

Here are some other reasons...

- Corrosion resistance Our anchors are completely hot-dipped galvanized with stainless bolts. Hollow Structural Sections (HSS)
 may be filled with molded urethane insulation to reduce thermal transfer and condensation and are commonly used in green
 construction. This option is recommended by Summit Anchor Company but must be specified.
- OSHA/ANSI compliance Our anchors have been engineered and tested to comply with current OSHA regulations and IWCA I-14.1 safety standard for fall arrest and suspended maintenance.

Summit's Anchor Co., **Signature eyelet** Forged - Quenched and Tempered



What is Quenching & Tempering?

w.summitanchor.cor

Quenching and tempering is a process that strenghtens and hardens steel. The process involves heating and theh rapidly cooling the part in water or oil. This process provides the performance needed for critical suspended access and fall protection applications.

SM-4 SERIES ANCHOR

SM-4 SERIES ANCHOR

SM-5 SERIES ANCHOR

SM-5 SERIES ANCHOR

Design and Layout

Experience and forethought are required to design a suspended maintenance system that is code-compliant and safe to utilize as well as to install. The ANSI/IWCA I-14.1 Window Cleaning Safety Standard requires that "anchor design and layout shall be performed by a qualified person experienced in such design" (Appendix C). Summit Anchor Co. has 25 years of experience designing code-compliant systems and providing layout drawings for use during installation, testing, and future maintenance work.

Design Considerations

- Carefully examine all pertinent structural and architectural project drawings to find areas requiring suspended access:
 - Windows located above 20 ft.
 - Building facade requiring periodic maintenance (i.e. re-caulking and waterproofing)
 - Areas above 6 ft. from grade that workers will need to access
- 2. Identify unique building features that may require additional suspended maintenance products:
 - Overhangs
 - Atriums
 - · Sloped roofs
 - Roofs above 300 ft.
 - Cornice conditions
 - Balconies
 - Skylights
 - Rotundas
 - Sloped walls
 - Curtain walls
 - · Canopies, signage, and other projections
- 3. Determine if anchors will be used with rope descent systems, as tie backs for swing stage equipment, or both.
- 4. Identify unique building features that may require additional suspended maintenance products:
 - Roof slabs
 - Concrete curbs
 - Concrete beams
 - Concrete walls
 - Steel beams
- 5. Verify that structural features to which anchors and davits, etc. might be attached have the capacity to support the allowable test and ultimate loading requirements below. OSHA and ANSI/IWCA I-14.1 standards require that structural elements are capable of supporting loading requirements (see loading requirements below).
- 6. Verify the structural capacity of the parapet wall commensurate with the loading application (i.e. parapet clamps, outriggers, suspension lines, fall arrest lines, power cables, etc.) during suspended maintenance. If the parapet wall cannot support these loads, additional suspended maintenance products may be required to circumvent loading the parapet.
- Verify that workers will be able to safely access anchor locations. The ANSI/IWCA I-14.1 requires fall protection when a maintenance worker must travel within 6 feet of an unprotected edge.

OSHA Subpart D Regulations prohibits rope descent systems for heights greater than 300 feet above grade, unless... See OSHA Subpart D for further information.

Minimum Loading Requirements for Anchors

- 5,000 lb. Ultimate load
- 2,500 lb. Test load
- 1,250 lb. Allowable load

NOTE: The structure to which anchorages are attached must also support the reactionary forces imposed by anchorages and davit, etc. (See <u>Specifications</u> for further detail.)

If parapets are not capable of supporting loads imposed by workers ropes, the designer sholud consider other methods of suspended access to bypass direct loading the parapet such as davit arm. <u>See Summit Anchor Co. Davit Manual.</u>

Anchor Layout Requirements

- 1. Anchors shall be identified on a plan of maintenance, typically posted on the inside of the roof door, so that workers can easily locate these anchorages on roofs.
- 2. Each worker shall be tied off to two independent anchorages one for a fall arrest rope and one for a suspension rope.
- 3. Anchorages shall be placed in line with the work area requiring service, and there shall be no objects obstructing the path of the rope from the anchorage to the work area. Properly aligned anchors prevent unsafe lateral rope movement or displacement, which damages the rope proportionate to load.
- 4. Anchors should be placed to allow for at least two workers to make rope descending system descents in the same area of the building façade for both suspension line and fall arrest line.
- 5. Consideration should be given to providing sufficient anchorage for rescue workers to access window cleaners in the event that they are stranded on the façade of the building.
- 6. Anchors shall not be placed within 6 feet (1800 mm) of an unprotected roof edge unless fall protection is provided. In most cases anchors can and should be placed further than 6 feet (1800 mm) back from the edge to reduce risk of falling.
- 7. Outside corners of the roof are of particular concern. Anchors must be located to prevent the rope from being displaced on the parapet/guardrail. See diagram below:
- 8. The diagram below illustrates the standards governing a safe placement of roof anchors:

www.summitanchor.com

ROOF HATCH FALL PROTECTION

MARGINAL OPTION ANCHORAGE FOR USE WITH HATCH FOR FALL PROTECTION ADDING AN ANCHORAGE FOR FALL PROTECTION ADJACENT TO A ROOF HATCH OR SKY LIGHT OR OPENING IN THE ROOF DOES NOT ELIMINATE A FALL HAZARD

ROOF ANCHOR

SUSPENSION ROP

"O-'8

ņ

6

--0I

ROOF ANCHOR

12'-0" MAX. SPACING

ANCHOR SPACING

12'-0" MAX. SPACING

12'-0" MAX. SPACING

15° MAX ANGLE OF

TIE-BACK

15° MAX

ANGLE OF

TIE-BACK

æ

- 3

- MAXIMUM AIRCHOR SPACING = 12F1. MAXIMUM TREACK DISTANCE FROM ROOF EDGE = 50FT. MAXIMUM ANGLE FROM PERPENDICULAR = 15° FOR BOTH SUSPENSION ROPE AND FALL ARREST ROPE. WINDOW CLEANER SHALL NOT REACH FURTHER THAN SIX (6) FEET IN ANY DIRECTION.

FALL PROTECTION ZONES

- GREEN ZONE: 15 FEET OR MORE FROM THE ROOF EDGE. EMPLOYER MUST ENSURE EACH EMPLOYEE IS PROTECTED FROM FALLING BY A (1) GUARDRAIL SYSTEM; (2) SAFETY NET SYSTEM; (3) TRAVEL RESTRAINT SYSTEM; (2) HOPENSONAL FALL ARREST SYSTEM, OR BY A 'DESIGNATED AREA," WHICH IS AN AREA DELINEATED BY A PHYSICAL WARNING INE: SEE OSHA SUBPART D FOR MORE INFORMATION ON PROPER SET-UP AND USE OF WARNING LINES. IN THE CASE WHERE A DESIGNATED AREA IS USED, OSHA REQUIRES EMPLOYERS TO IMPLEMENT AND ENFORCE A WORK RULE PROHIBITING EMPLOYEES FROM GOING WITHIN 15 FEET OF THE ROOF EDGE WITHOUT USING FALL PROTECTION.
- YELLOW ZONE: AT LEAST 6 FEET BUT LESS THAN 15 FEET FROM THE ROOF EDGE. EMPLOYER MUST ENSURE EACH EMPLOYEE IS PROTECTED FROM FALLING BY A (1) GUARDRAIL SYSTEM; (2) SAFETY NET SYSTEM; (3) TRAVEL RESTRAINT SYSTEM; OR (4) PERSONAL FALL ARREST SYSTEM. HOWEVER, FOR WORK THAT IS BOTH INFREQUENT AND TEMPORARY, OSHA ALLOWS EMPLOYERS TO USE A "DESIGNATED AREA,"
- RED ZONE: LESS THAN 6 FEET FROM THE ROOF EDGE. EMPLOYER NUST ENSURE EACH EMPLOYEE IS PROTECTED FROM FALLING BY A (1) GUARDRAIL SYSTEM; (2) SAFETY NET SYSTEM; (3) TRAVEL RESTRAINT SYSTEM; OR (4) PERSONAL FALL ARREST SYSTEM. LEGEND

NON-RESTRICTED DROP POINTS

ROP

35'-0" 30'-0"

40'-0

" "

FALL ARRES

25'-0

20'-0"

2'-8"

15'-0" 10'-0'

DROP POINT

6'-0"

6'-0" MAX. REACH

6'-0" MAX. REACH

6'-0" MAX. REACH

1

1

1 6'-0" MAX. REACH

> BUILDING FACADE

Æ

E

Anchor Model Guide

CONCRETE - EMBED ANCHORS	Dr Co.
	Affiling, Summit Anch Anterna Summit Anch Pranting and Anthony Summit Anch Pranting and Anthony Summit Anch Pranting and Anthony Summit Anchorem Pranting and Anthony Summit
3	
SINGLE PLATE, CAST-IN-PLACE ANCHOR E1C-PE-04-050-050-18B3.5-G SM-6-5-18-12 (2) (2) (2) (2)	State Sec. (.2) matrix # America 1990000 matrix # America 1990000 matrix 0 Bits 1990000 advantips or 5 Bits 1990000 MOMENCLATURE 506.6 Bits Bits
Image: Construction Image: Construction Image: Constretion Image: Constretion	A-18

CONCRETE - EMBED ANCHORS	or Co.	Add
	MMMM, Summit Ancho	4.01 Cond. Annual 1 and 2 a
2-STUD, CAST IN PLACE ANCHOR E1C-PE-04-080-040-00R0.0-G SM-85-[8-4]-X-12-V-06 • FOR CONCRETE • FOR CONCRETE	NALE DIAMN RE- ORICELTS IF APPENDE DE NOME	1027-13 1020201 0.53mn 1020201 1020000 1020200 102000 102000 102000 102000 1020000 1020000 1020000 1020000 1020000 1020000 10200000
HOLE PAILERN (6)—STUD SIZE NOTE: REPLACE 0 WITH X WIEN EVE WELDED DWEETLY TO BASE PAULE	A- 1	19

SM-1 Series Anchors - 4 Bolt Pattern

www.summitanchor.con

ROOF ANCHOR BOLTED THROUGH CONCRETE SLAB

MIN. EDGE

30"

24"

24"

24"

12*

24"

24"

12*

12'

26"

24"

38"

30"

(TRA) =TRA-XX-XX

ĺnØ x XX+4*

frø x XX+4*

€"Ø x XX+4"

inø x XX+4*

frØ x XX+4*

€"Ø x XX+4"

irø x XX+4*

€"Ø x XX+4"

€"Ø x XX+4"

irø x XX+4*

\$*01 x XX+4*

≩"Ø x XX+4"

}"Ø x XX+4"

000-2,75

5,000-2,50 2,000-3,00 3,000-2,50 4,000-2,50

500-2, 000-2,

000-3,50

000-2,50

,000-3,25

000-3,0

1,000-3,75 1,000-3,25 1,000-3,25

000-2, 3,000-5,50 4,000-5,00 4,500-4,75

000-3,00

,000-4 000-3,7

12" X 12" X 5/8" 10" ÷ 3,000-3,00

14" X 14" X 5/8 12" ÷

6" X 16" X 5/8 14" ÷

0" X 10" X 5/8 8" á.

2" X 12" X 5/8 10" é.

4" X 14" X 5/8 12" ÷.

5" X 16" X 5/8 14" <u>4</u>-1,000-3,25 1,000-3,00 1,500-2,75

0" X 10" X 3/4

1" X 14" X 34 12 ÷.

6" X 16" X 3/4 13" ÷.

8"

á.

mainten	ance equipi	ient, i	Installe		esung.							
	SUMMIT STANDARD											
	MODEL	HOLE SIZE IN BASE PLATE	TUBE LENGTH {T.L}	PIPE SIZE {P.S.}	BASE PLATE SIZE(B.P.)	HOLE SPACING {H.S.}	WELD SIZE {W.S.}	MIN.SLAB THICKNESS (M.S.)				
	SM-1-8-12-12-06	3/4"	12*	3 ^j * O.D. SCH.40, x .216*	8" X 8" X 1/2"	6"	ł	2,000-5,50* 3,000-4,75* 4,000-4,00* 4,500-4,00* 5,000-3,75*				
	SM-1-10-12-58-06	3/4"	12*	3 ¹ O.D.	10" X 10" X 5/8"	8"	ŧ	2,000-4,50* 3,000-3,50* 4,000-3,00*				

4,000-4,00 4,000-3,75 4,500-3,50 4¹* O.D. H.80, x .33 16" X 16" X 7/8 13" į. 4,000-4,25" 4,500-4,00" 5,000-4,00" SM-1-8-12-12-06 APPROVALS DJ.M.

mmit Anchor Co. 🕷 SM-1-xx-xx

///////////////////////////////////////	s		it And	hor C	•							
etropolitan Ct., S	buite F: F	Frederic	HU AIIC k. MD 21704	chor C	0.							
.874.4941, Fax	301.620	0.9819										
e: 800.372.1098	Web: w	ww.su	nmitanchor.co	m								
one stop prov	rider fo	r all fa	Il protection	n,								
nded mainten	ance e	quipm	ent, installa	tion and te	sting."							
				su	MMIT ST	ANDARD						
	HOLE	TUBE			HOLE	TUBE TO BASE	MIN	MIN SLAB		MIN EDO		
MODEL	SIZE IN	LENGTH	PIPE SIZE (Ps)	BASE PLATE SIZE/Bn	SPACING	WELD SIZE	EMBEDMENT	THICKNESS	HILTI HAS ROD	DISTANO		
	PLATE	(TI)		OLLE(OP)	{Ss}	{Ws}	DEPTH (Eb)	{Sh}	(i m)	(Ed)		
							2,500-3.75"	2,500-5.25*				
SM-1-8-0-12-06	3/4"	0*	N/A	8" X 8" X 1/2"	6*	N/A	4 000+3.25*	4 000-4.75*	§" Ø X 7-5/8"	10"		
							5,000-3.25*	5,000-4.75"				
							2,500-7.00"	2,500-8.50*				
SM-1-8-12-12-06	3/4"	12"	37 O.D.	8" X 8" X 1/2"	6*	*	3,000-6.25"	3,000-7.75*	5/8" Ø X 10"	26*		
			3GH.40, X .210				5,000-5.25"	5,000-6.75*	D/O 10 X 7-5/8"			
							2,500-5.50*	2,500+7.00*				
SM-1-10-12-12-06	3/4*	12"	3 ¹ / ₂ " O.D.	10" X 10" X 1/2"	8*	*	3,000-5.00"	3,000-6.50*	∦"ØX7-}"	20*		
		-	SCH.40, x .216*		1		4,000-4.50"	4,000-6.00*				
							2,500-4.50*	2,500-6.00*				
SM-1-12-12-12-08	3/4"	12"	3 ¹ 2" O.D.	12" X 12" X 1/2"	10"	7	3,000-4.50"	3,000-6.00*	₹"ØX7-₹"	16*		
			SCH.40, x .216*		l	•	4,000-4.00*	4,000-5.50" 5.000-5.50"	a			
					-		2,500-4.00*	2,500-5.50*				
SM-1-14-12-12-09	3/4*	12*	3 ¹ 0.D.	147 X 147 X 107	12"	2	3,000-4.00*	3,000-5.50*	2 0 X 7.2	12*		
Sim-1+14+12+12+00	3/4	12	SCH.40, x .216*		1 ¹⁴	1	4,000-4.00"	4,000-5.50*	8 00 1.1.8.	12		
							2.500-4.00*	2.500-5.50				
Chi 4 40 40 40 00	2/4	1.01	3⊉" O.D.	101 1 101 1 100	147		3,000-4.00"	3,000-5.50*	2 A Y 7 2	1.2*		
SM-1-10-12-12-06	3/4"	12*	SCH.40, x .216*	10° X 10° X 1/2°	14"	Ŧ	4,000-4.00"	4,000-5.50"	8 0 X 7-8"	12"		
					I		5,000-4.00*	5,000-5.50		I		
			34" O.D.			5.	3.000-6.50*	3.000-8.00*	5/8" Ø X 10"			
SM-1-10-18-58-06	3/4*	18"	SCH.80, x .300*	10" X 10" X 5/8"	8"	16"	4,000-5.625*	4,000-7.125*	5/8" Ø X 7-5/8"	22*		
							5,000-5.50*	5,000-7.00*				
			34:00				2,500-5.625*	2,500+7.125*				
SM-1-12-18-58-06	3/4"	18"	SCH.80, x .300*	12" X 12" X 5/8"	10"	18"	4,000-5.00"	4,000-6.50*	₹"ØX7-5/8"	16"		
							5,000-4.50*	5,000-6.00*				
	7		2800				2,500-5.625*	2,500+7.125*		_		
SM-1-14-18-58-06	3/4*	18"	SCH 80 x 300*	14" X 14" X 5/8"	12"	ਹਿੰ"	4.000-5.00"	4.000-6.50*	₹"ØX7-5/8"	16*		
							5,000-4.50*	5,000-6.00*				
/							2,500-5.00*	2,500-6.50*				
SM-1-16-18-58-06	3/4"	18"	37 O.D.	16" X 16" X 5/8"	14"	à*	3,000-4.50*	3,000-6.00*	₿"ØX7-₿"	12"		
			3Gn.ou, X .300			-	5,000-4.00"	5,000-5.50*	-			
							2,500-8.50*	2,500+10.00*				
SM-1-10-24-58-08	3/4*	24"	4 ¹ / ₂ " O.D.	10" X 10" X 5/8"	8"	à.	3,000-8.00*	3,000-9.50*	iπ Ø X 10"	28"		
			SCH.80, x .237*		1		4,000-7.50"	4,000-9.00"				
							2,500-6.50*	2,500-8.00*				
SM-1-12-24-58-08	3/4"	24"	4 ¹ / ₂ O.D.	12" X 12" X 5/8"	10"	<i>#</i> *	3,000-6.00"	3,000-8.00*	₽"ØX 10"	24"		
			SCH.80, x .237*		1	10	4,000-5.50"	4,000-7.00*		l -'		
							2.500-5.625*	2.500-7.125*				
SM-1-14-24-59 09	3/4*	24*	4 ² O.D.	14" X 14" X 5/0"	12"	27	3,000-5.50*	3,000-7.00*	2" (X X 7.5/P"	18*		
0	3/4	24	SCH.80, x .237*		14	16	4,000-5.00"	4,000-6.50*	8 W A 7-0/8	10		
		-			-		2.500-8.50*	5,000-6.00* 2,500-10.00*				
	7.00	0.01	4 ⁴ " O.D.				3,000-8.00*	3,000-9.50*	31.00.000			
SM-1-12-36-34-07	//8"	36*	SCH.80, x .337*	12° X 12° X 3/4°	9.	18	4,000-7.50"	4,000-9.00"	‡" 12" x 12"	30"		
		_			-		5,000-7.50*	5,000-9.00*				
/ · · · · · · · · · · · · · · · · · · ·			4# O.D.				3 000-10.00*	3.000-11.00"				
SM-1-12-45-34-07	7/8"	45"	SCH.80, x .337*	12" X 12" X 3/4"	9"	रहे"	4,000-9.00"	4,000-10.50*	∦"ØX14"	22*		
			<u>-</u>				5,000-9.00*	5,000-10.50"				
				4 0 40		~~						
			SM-	1-8-12	-12-	UG PC	R.: #01041, #011	05, #01116, #0	1242, #01268,			
			-	-77		/ 🕮	1307. #01534. #0	1585, #01586		4307 1000000		
		0-40	OLT PATTERN		/	/	ROVALS			Frederick, MD 2		
		0-PLA	TE SIZE SQUARE		/	/ 🖻	J.M 07.05.2015			Fax: 301.8/4.49		
		<u>О</u> -тия	E LENGTH		1 1	9	£ 27.05.2015	Summ	it Anchor Co.	Visb: www.sum		
		0-PU	TE THICKNESS		J /		MA	RETING FOR AND	HORS MOUNTED WITH	EPOXY FAST		
		0-10	E SIZE -						DRAWING NO.	PLOT S		

0 (800) 372-1098

llim.	F
///////// Summit Anc	hor
4507 Metropolitan Ct., Suite F; Frederick, MD 21704	

ROOF ANCHOR WRAPPED AROUND STEEL BEAM

Co. 4507 Metropolitan Ct., Suite F; Frederick, MD 21704 Tel: 301.874.4941, Fax: 301.620.9819 Toll Free: 800.372.1098 Web: <u>www.summitanchor.com</u> "Your one stop provider for all fall protection,

uspended maintenance equipment, installation and testing.

SUMMIT STANDARD ANCHOR MODELS										
MODEL #	HOLE SIZE IN BASE PLATE	TUBE LENGTH {TI}	PIPE SIZE {Ps}	BASE PLATE SIZE {Bp}	TUBE TO BASE WELD SIZE {Ws}	MAX. BEAM WIDTH (B.W.)	MIN. BEAM WIDTH, CENTERED			
SM-1-8-2-12-06	3/4"	2"	3 ¹ " O.D. SCH.40, x .216"	8" X 8" X ¹ / ₂ "	<u>1</u> " 4	5 <mark>1</mark> "	4"			
SM-1-10-2-12-06	3/4"	2"	3 ¹ / ₂ " O.D. SCH.40, x .216"	10" x 10" X ¹ "	<u>1</u> "	7 1 "	5"			
SM-1-12-2-58-06	3/4"	2"	3 ¹ / ₂ " O.D. SCH.40, x .216"	12" x 12" X ⁵ 8	1 4	9 <mark>1</mark> "	6 <u>1</u> "			
SM-1-8-12-12-06	3/4"	12"	3 ¹ / ₂ " O.D. SCH.40, x .216"	8" X 8" X ¹ / ₂ "	<u>1</u> " 4	5 <mark>8</mark> "	4"			
SM-1-10-12-58-06	3/4"	12"	3 ¹ / ₂ " O.D. SCH.40, x .216"	10" x 10" X 🖥	<u>1</u> " 4	7 <u>1</u> "	5"			
SM-1-12-12-58-06	3/4"	12"	3 ¹ " O.D. SCH.40, x .216"	12" x 12" X ⁵ / ₈	1 4	9 <mark>1</mark> "	6 <mark>1</mark> "			
SM-1-8-18-58-06	3/4"	18"	3 ¹ / ₂ " O.D. SCH.80, x .300"	8" X 8" X ⁵	5." 16	5 <mark>8</mark> "	4"			
SM-1-10-18-58-06	3/4"	18"	3 ¹ / ₂ " O.D. SCH.80, x .300"	10" x 10" X 🖁	<u>5</u> " 16	7 <mark>1</mark> "	5"			
SM-1-12-18-58-06	3/4"	18"	3 ¹ / ₂ " O.D. SCH.80, x .300"	12" x 12" X ⁵ / ₈ "	<u>5</u> " 16	9 <u>1</u> "	6 <u>1</u> "			
SM-1-8-24-58-06	3/4"	24"	4 ¹ / ₂ " O.D. SCH.40, x .237"	8" X 8" X ⁵ "	5." 16	5 <mark>8</mark> "	4"			
SM-1-10-24-58-06	3/4"	24"	4 ¹ / ₂ " O.D. SCH.40, x .237"	10" x 10" X ⁵ / ₈	<u>5</u> " 16	7 1 "	5"			
SM-1-12-24-58-06	3/4"	24"	4 ¹ / ₂ " O.D. SCH.40, x .237"	12" x 12" X 5	<u>5</u> " 16	9 <mark>1</mark> "	6 <u>1</u> "			

SM-1-8-12-12-06

0-41 0-71 0-71			
0-# 0-#	LE SIZE		_/
APPROVING LUM	Summ	fit Anchor Co. Web	Metropostan Ct., Sube P nick, MD 21704 01.874.4841 211.820.9819 Tes: 800.372.1098 www.summitanchor.com
	MARKETING DRAWING	FOR ANCHOR WRAPPED A	ROUND STEEL BEAM
		DRAWING NO.	PLOT SCALE: 114
	SM-1-XX-XX-XX	A-2	PAGE NO. 2 OF 2

MIN

MIN. CONCRETE TOTAL HEIGHT

{Th}

6"

6"

8"

8"

4-1/2"

ROOF ANCHOR WRAPPED AROUND CORRUGATED DECK SUMMIT MODEL #: SM-1 ROOF ANCHOR 4507 Metropolitan CL, Sulte F; Frederick, MD 21704 Te: 301.874 441, Fas: 301.820.9819 Toll Free: 800.372.1098 Web: <u>www.summitanchor.com</u> "Your one stop provider for all fall protection, suspended maintenance equipment, installation and testing." SUMMIT STANDARD ANCHOR MODELS MIN. DECK DEPTH TUBE TO BASE WELD MIN. TOP ASE PLATE MIN. RIB HOLE TUBE PIPE HOLE SIZE IN RIB TO TOP OF MODEL # ENGTH SIZE {Ps} WIDTH {Rw} PACING BASE PLATE SIZE {Bp} {TI} {Hs} SIZE {Ws {Dd} SLAB {Tr} <u>1</u>" О Г SCH 40, > SM-1-10-12-58-06 3/4" 12" <u>1</u>= 10" X 10" X ^동' 7<u>1</u>" 8" 2" 4" .216" 32" O.D SCH.80 x .300 SM-1-10-18-58-06 3/4" 18" <u>5</u>" 10" X 10" X 58" 7<u>1</u>" 8" 2" 4" I₂" O.D. SCH.40 5" SM-1-10-24-58-06 3/4' 24 <u>5</u>= 10" X 10" X 턁 7<u>1</u>" 8' 3" .237 5¹2" O.D SCH.80 5 16 SM-1-10-36-34-06 3/4" 36" 0" X 10" X ³ 7¹8" 8" 3" 5" 33 4¹/₂" O.D. SCH.40 SM-1-12-27-58-06 12" X 12" X 🖁 5" 10" 3/4' 27" 5 16 2" 2-1/2" x .237 SM-1-8-12-12-06

	ISM-1-XX-XX	A-2	PHOE NO. 2 OF 2
		DRAMING NO.	PLOT SCALE 114
	MARKETING DRAWING FC	IR ANCHOR WRAPPED ARC	IUND CORRUGATED DE
	Summ	it Anchor Co.	eb. www.summitanchor.com
DJ.M.			2 301 874 4941 x: 301 820 9819 8 Free: 800 372 1098
JOB F. 0000 APPROVALS		45 F0	07 Metropolitan Ct., Suite I aderick, MD 21704
POR .: #0	873, #01398, #01491		
O-HOLE	5/26		/
O-PLAT	E THORNESS	/	/
0-TUBE	LENGTH -	/	/
O-PLAT			/
0 100		[]]	_ /

SIZE AS REQUIRED FOR APPLICATION. SMF-GN: OPTIONAL MOLDED URETHANE INSULATION REDUCES THERMAL TRANSFER AND CONDENSATION; COMMONLY USED IN GREEN CONSTRUCTION. SM-TRA: 58'70 or 24'70 304 B8 GHISEL TIPPED STAINLESS STEEL THREADED ROOS a) F 564 HEX NUT b) 18-8 STAINLESS STEEL LOCK WASHER D) 10-0 STRINGERS 2... WASHER C) F 436 HARDENER GALVANIZED FLAT WASHER SM-PLT-TS: 2"x2"x³/₁₆" TUBE STEEL, SPAN A MINIMUM OF 3 BOTTOM RIBS 4 6 1 ۲ _____ Ð ASSURANCE THAT SUMMIT WHEN INSTALLED PROPERLY, 5 SUPPORT LOADS AS EQUIDED a) 1,250 LB. WORKING b) 2,500 LB. PROOF LC FAIL DUE TO I EQUIPARTS OF A PROPAGAILMAL SINGINEER WITH EXPERIENCE IN SUSPENDED ACCES EQUIPART. ADDITIONALLY, AND/IOSS SHALL BE TESTED AND CERTIFIED UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER BEFORE BEING INTIALLY PLACED INTO SERVICE (ac). SEE WICH 4-14. UNDOWN OF LEARNING PARTY PLACED. ONG INFORMATION TO THE OWNER, OR THEIR REPRESENTATIVE, VEREYING THE ANCHOR TOMPELES WITH APPLICABLE LOCAL AND NATIONAL CODES, REGULATIONS, AND SAFETY ARDS FOR THE INTENDED USE. NAT THE APPLICATION IN WHICH THE ANCHOR(S) ARE USED AND THE STRUCTURE SM-1-XX-XX

SM-1 Series Anchors - Custom

SM-4 Series - Weld-On Anchor

APPLICATION VARIES FOR STRENGTHENING BEAMS FOR LOADS IMPOSED BY ANCHORS. CONSULT WITH PROJECT ENGINEER.

107

SM-5 Series - 4 Stud CIP Pattern Anchor

ENGINEERING/ANALYSIS PROVIDED UNDER THIS STAMP AND SEAL BY DH ONLY FOR EQUIPMENT DESIGN SHOWN ON THESE PLANS AND IN NO WAY HAVE NOT BEEN REVIEWED, EQUIPMENT IS ANALYZED F INTENDED USAGE OF EQUIPMENT IS AULT OF THIS SCORE

M A5720 GR 50

Summit Anchor Co. 181 MERCER

SM-5-12-29-58 A-1

www.summitanchor.cor

PLOT SCALE: 1:1

12"

13"

12"

12"

13"

12"

12"

12"

12"

SM-6 Series - Single Pipe CIP Anchor

Summit Anchor Co. ulte F: Frederick, MD 21704 301 520 8919 Web: www.summitanchor.com Web: www.summitanchor.com Web: www.summitanchor.com Hore equipment: installation and testing."	ROOF ANCHOR CAST IN PLACE SUMMIT MODEL# SM-6
SUMMIT STANDARD ANCHO	OR MODELS

MODEL #	TUBE LENGTH {TI}	EXPOSED LENGTH {EI}	EMBED DEPTH {Eb}	MIN. SLAB THICKNESS {MS}	TUBE DIA/SCH. (Ø, SCH.)	BASE PLATE SIZE {Bp}	EDGE DISTANCE {Ed}
SM-6-5-6-12*	6"	1"	4,000 PSI - x.xx" 4,500 PSI - x.xx" 5,000 PSI - x.xx" 6,000 PSI - x.xx"	4,000 PSI - x.xx" 4,500 PSI - x.xx" 5,000 PSI - x.xx" 6,000 PSI - x.xx"	3 ¹ 2" O.D. SCH.40, x .216"	5"x5"x ¹ "	14"
SM-6-5-12-12*	12"	6 <u>1</u> "	4,000 PSI - 7.00" 4,500 PSI - 7.00" 5,000 PSI - 6.50" 6,000 PSI - 6.00"	4,000 PSI - 7.50" 4,500 PSI - 7.50" 5,000 PSI - 7.00" 6,000 PSI - 6.50"	3 ¹ " O.D. SCH.40, x .216"	5"x5"x ¹ 2"	14"
SM-6-5-18-12	18"	12 <u>1</u> "	4,000 PSI - 7.50" 4,500 PSI - 7.50" 5,000 PSI - 7.00" 6,000 PSI - 6.00"	4,000 PSI - 8.00" 4,500 PSI - 8.00" 5,000 PSI - 7.50" 6,000 PSI - 6.50"	3 ¹ 2" O.D. SCH.40, x .216"	5"x5"x ¹ 2"	14"
SM-6-5-24-12	24"	18 <u>1</u> "	4,000 PSI - 8.00" 4,500 PSI - 8.00" 5,000 PSI - 7.50" 6,000 PSI - 7.00"	4,000 PSI - 8.50" 4,500 PSI - 8.50" 5,000 PSI - 8.00" 6,000 PSI - 7.50"	4 ¹ " O.D. SCH.40, x .237"	6"x6"x ¹ "	24"
SM-6-6-30-12	30"	23 <u>1</u> "	4,000 PSI - 9.50" 4,500 PSI - 9.50" 5,000 PSI - 8.50" 6,000 PSI - 8.00"	4,000 PSI - 10.00" 4,500 PSI - 10.00" 5,000 PSI - 9.00" 6,000 PSI - 8.50"	4 ¹ " O.D. SCH.40, x .237"	6"x6"x ¹ 2"	30"
SM-6-6-38-12	38"	28 <u>1</u> "	6,000 PSI - 10.00"	6,000 PSI - 12.00"	4 ¹ / ₂ " O.D. SCH.80, x .337"	6"x6"x ¹ 2"	14"
SM-6-6-49-12	49"	39 <u>1</u> "	6,000 PSI - 10.00"	6,000 PSI - 12.00"	4½" O.D. SCH.80, x .337"	6"x6"x ¹ 2"	20"

SM-6-5-6&12, EXPOSED LENGTH IS MINIMAL VERIFY FLASHING CONDITION IF REQUIRED.

SM-6-5-18-12 O-FOR CONCRETE

SM-81 Series - 2 Bolt Pattern Anchor

SUMMIT STANDARD HOLE SPACING {Ss} TUBE TO BASE WELD SIZE {Ws} MIN. EDGE DISTANCE {Ed} MIN.WALL THICKNES: {Sh} BASE PLATE SIZE{Bp} {TRA} =TRA-XX-XX PE SIZE (P 000-8.00 8" X 4" X 1/2 6" <u>1</u>= 5" N/A 5"Ø x XX+4" ,000-8.00 8,000-8.00" 4,000-8.00" 6,000-8.00" N/A 10" X 4" X 1/2 6" 1-@ x XX+4" 5* SM-81-8-12-58-V-06 0- 2 BOLT PATTERN PLATE SIZE
 O
 TUBE LENGT
 O
 PLATE THICH -EYE ORIENTATION - HOLE SIZE

0"

0"

WALL ANCHOR BOLTED THROUGH CONCRETE WALL

SUMMIT MODEL #: SM-81

DRAWING NO. PLOT SCALE

BASE PLATE

SIZE

{Bp}

8" X 4" X 1/2"

8" X 4" X 1/2"

8" X 4" X 1/2"

HOLE

{Hs}

6"

6"

6"

MIN. EDGE

{Ed}

6"

6"

6"

SPACING DISTANCE

CONTACT US FOR MORE INFORMATION:

MARKETING DRAWING FOR MOUNTED WITH CIP CAGE DRAWING NO. PLOT SCALE: 1:1

SM-81-xx-xx

ANCHOR MOUNTED WITH CIP CAGE

SUMMIT STANDARD										
MODEL	TUBE LENGTH {TI}	PIPE SIZE {Ps}	(Bp) BASE PLATE SIZE	TH.ROD Ø/ SPA.{Rs}	TUBE TO BASE WELD SIZE {Ws}	MIN. SLAB THICKNESS {Ms}	MIN. EDGE DISTANCE {Ed}	MIN. EDGE DISTANCE {Edw}		
SM-1-10-12-58	12"	3½" O.D. SCH.40, x .216"	10"x10"xg	3 4 "Ø - 7"	1= 4	4,000-8.00" 5,000-7.00"	12"	14"		
SM-1-12-18-58	18"	3 ¹ " O.D. SCH.80, x .300"	12"x12"x ⁵	<u>3</u> ªØ - 9"	<u>5</u> = 16	4,000-8.00" 5,000-7.00"	12"	14"		

POR.: #01168 208 # 0000 APPBOVALS	Summi	4507 Frede Tel 3 Fax: it Anchor Co. Wet	Metropolitan OL, Suite F rick, MD 21704 01.874.4041 101.625.9819 rea: 800.372.1098 www.sureflanches.com
_	MARKETING DRA	WING FOR MOUNTED	WITH CIP CAGE
		DRAWING NO.	PLOT SCALE: 1:1
	SM-81-xx-xx	A-2	PAGE NO.

SM-85 Series - 2 Bolt Pattern Anchor

//////							CAST IN PLACE ANCHO SUMMIT MODEL #: SM-8			
507 Metropolitan C ei 301 874 4941 ; 01 Free: 800 372 : 1 Your one stop p uspended maint	t, Suite ax: 301. 098 Web rovider enance	EF; Frederi 620.9819 www.su for all f equipn	nit An ick, MD 217 immitanchou iall protect nent, insta	acom ion, illation and	Co.			SUMINITI M	IODEL 1	#: ⊃IVI-
MODEL	STUD	MAX. TUBE LENGTH	SUMI PIPE SIZE {Ps}	WIT STANE	ARD EPOXY (Bp) BASE PLATE SIZE	MOUNTE {Ss} STUD ISPACING	MIN.EMBED DEPTH {Eb}	MIN.SLAB THICKNESS {Ms}	MIN. EDGE DISTANCE {Edw}	MIN. EDG DISTANC {Ed}
SM-85-8-0-12-06	5/8"	{11} 0*	N/A	1. 4	8" X 4" X 1/2"	6"	4,000 - 4.00" 5,000 - 3.50" 6,000 - 5,50"	4,000 - 6.00" 5,000 - 6.00" 6,000 - 6,00"	12*	12"
SM-85-8-4-12-06	5/8"	4"	3 ¹ / ₂ " O.D. SCH.40, x .216"	<u>1</u> "	8" X 4" X 1/2"	6"	4,000 - 6.75" 5,000 - 6.25" 6,000 - 5.75"	4,000 - 8.00" 5,000 - 8.00" 6,000 - 7.00"	24"	24"
SM-85-10-12-34-06	5/8"	12"	3 ¹ " O.D. SCH.40, x .216"	5. 18	10" X 4" X 3/4"	7"	6,000 PSI - 5.50"	6,000 PSI - 7*	15"	15"
					0	IR CONCRETE INED APPLICATION ATE SIZE SQUARE INE LENGHT *	<u>SM-85</u>	- <u>[8-4]-X</u> -	• <u>12-V</u> -	- <u>06</u>

Various Attachment Details provided by Summit Anchor Co.

info@summitanchor.com

(800) 372-10

0

www.summitanchor.com