

PRODUCT SUBMISSION

RAMSET CAST-IN FALL ARREST SYSTEM

Version: 2025/06



MCM CONSTRUCTION MATERIALS SUPPLY COMPANY LIMITED

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SAMPLE SUBMISSION AND APPROVAL FORM

Contract Title : _____	Ref. No. : _____
_____	Date : _____
_____	Ref. No. of Previous Submission : _____
Contract No. : _____	(1) _____
File Reference: _____	(2) _____

DETAILS OF SUBMISSION

To : Contract Manager's Representative (Attn: _____)

From : _____

The enclosed sample and catalogue* / technical data* / test report* / job reference* as described below have been checked for compliance with the Specifications and Drawings, and are submitted for approval.

1. General Information

a. Materials Description	:	Ramset Cast-in Fall Arrest System (PSA12SS / TCM12RSS75)
b. Location	:	_____
c. Specification Ref. Page	:	_____ Item : _____
d. Drawing Ref. No.	:	_____
e. B.Q. Ref. No.	:	_____
f. Anticipated Date of Approval	:	_____

2. Technical Information

The submitted sample has been checked against the specification and drawings as listed below:

a. Brand	:	Ramset
b. Country of Origin	:	China
c. Manufacturer's Name & Address	:	Ramset Fasteners (HK) Limited Unit D, 22/F, Capital Trade Ctr, No.62 Tsun Yip St, Kwun Tong, KLN.
d. Factory's Name & Address	:	C/M Ramset Fasteners (HK) Limited Baodi District, Tianjin, China
e. Supplier Name & Address	:	MCM Construction Materials Supply Company Limited Unit 515-516, 5/F, One Midtown, 11 Hoi Shing Road, Tsuen Wan, N.T.
f. Appearance	:	See attached sample
g. Colour	:	See attached sample
h. Specification	:	_____
i. Manufacturer's Catalogue	:	Attached
j. Test Report	:	Attached
k. Previous Job Reference	:	Attached
l. Supplementary Information	:	Attached

For and on behalf of the Contractor

(_____)

CONTRACT MANAGER'S COMMENTS

To : _____

From : Contract Manager's Representative (_____)

On the basis of the sample and information given, the above sample submitted is:

(1) *	Approved	_____
(2) *	Approved subject to	_____
(3) *	Not approved because	_____

_____ and re-submission is required.

Remarks: _____

Approval does not alter the requirements of the Contracts.

Contract Manager's Representative (_____)

Date:

(* Delete if inappropriate)



Submission

Ramset – Cast-in Fall Arrest System

Product Information	P.1
Extraction from OSHA	P.2
- Guideline on requirement and testing Test	
Report to EN795 - Static Strength Test	P.6
Report to EN795 - Dynamic Strength Test	P.9
Job Reference Record (Ramset Safety Ring)	P.12

RAMSET CAST IN FALL ARREST SYSTEM

TCM Cast In Anchors



Cast-In Anchor to suit various bolt type

The TCM is a medium to heavy duty, cast-in ferrule. All steel threaded socket for casting into pre-cast concrete and institute concrete elements, giving a prefixed fastening point.

Product Advantages

- Stress free anchoring close to edge and reduced anchor spacing
- Cast-in placement eliminates the need for drilling, this is particularly important where reinforcing is present in the fixing zone
- Ideal for shallow embedment as the anchor can be tied into the reinforcing to distribute the load over a wider area to become an intergral part of the reinforcing structure
- High tensile load carrying capacities as well as applications in tension zones
- A4 316 is used for Ramset Fall Arrest System

Substrates

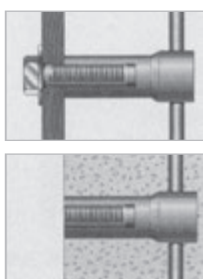
- Concrete

Typical Applications



- Structural connections
- Curtain wall and facade fixings
- Anchoring bracing and precast panels

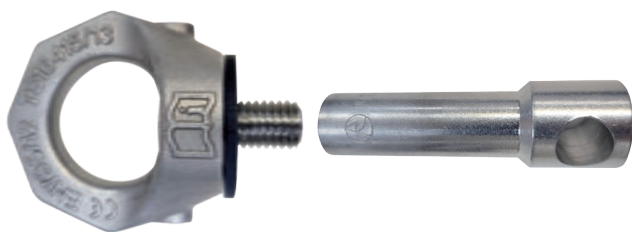
Installation



Concrete inserts can be set in wet concrete, attached into reinforcing through the cross hole or fastened to the inside of formwork with a bolt through a bolt through the formwork.

1. Drill hole in formwork. Pass the bolt through the hole into the concrete insert and tighten. Tie the insert to the reinforcing system.
2. Pour the concrete. Remove the bolt and formwork leaving the concrete insert firmly embedded.

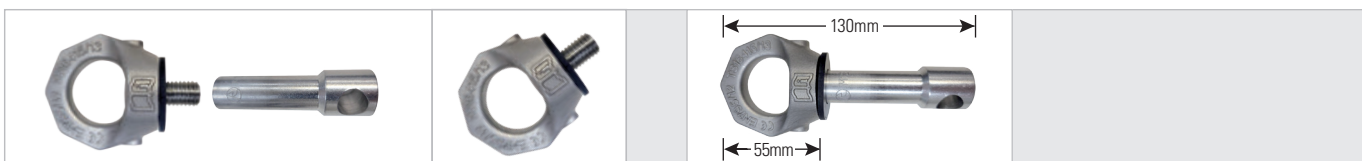
RAMSET Safety Ring Anchor System



RAMSET Safety Ring Anchor System

Conforming to the Requirement of BS EN 795:2012 Standard Specifically design for use on buildings where windows cleaners and others that employ industrial rope access. The Safety Ring Anchor System provides a secure, permanent anchorage point for fall arresting safety harnesses. The system meets the static and dynamic strength tests per BS EN 795:2012, as highlighted by OSHC (Occupational Safety and Health Council).

Safety Ring Anchor System (EN795)



Part No.	Material	Thread Ø	Min. Edge Distance (mm)	Min. Concrete Thickness (mm)	Thread Length (mm)	Ring Length (mm)	Overall Anchor Length (mm)	For use only with
PSA12SS	AISI 316(A4)	M12	175	150	25	55	130	TCM12RSS75

NOTE: When installed in accordance with Ramset™ specifications, anchor performance is fully compliant with AS/NZS1891.4:2009 "Industrial fall-arrest systems and devices" BS EN795 (Static Tension - 12kN, Drop test - 100kg/2m)

* Refer to Ramset™ Design Guide for more information or explanation of technical data

Non-destructive pull-out test of 6kN and sustain for a minimum of 1 min. is required for each Safety Ring Anchor after installation to ensure the compliance of BS EN 795 Standard.



BS EN795:1997

Protection against falls from a height - Anchor devices

- Requirements and testing

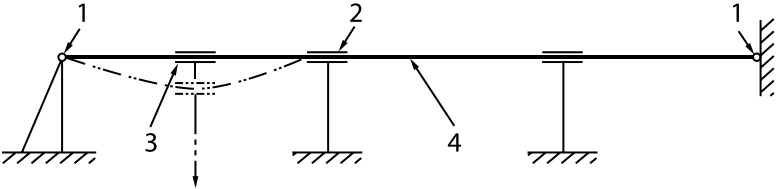
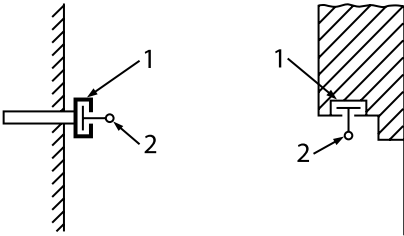
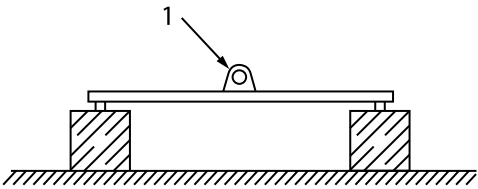
Use of truss-out bamboo scaffold is frequent for works at height like renovation of external walls of buildings, removal of unauthorized building works, installation of air conditioners or cleaning of external walls of buildings, etc. Sometimes these renovation and maintenance workers cannot locate a secure anchorage point to anchor the safety harness, so they just anchor their harness to insecure structures like guardrails, scaffolds, water pipes, etc. However, such insecure structures usually cannot stand sudden vibration or pulling force. Severe accidents of falling from height are resulted. This article will introduce the different types and their respective test requirements of anchor devices under the BS EN 795:1997 standard, including a type of transportable temporary anchor device.

➔ Classification of anchor devices

Anchor devices are classified into 5 classes under BS EN795:1997 to suit for different needs:

Class	Description	Example
A1	Structural anchors designed to be secured to vertical, horizontal and inclined surfaces (e.g. walls, columns, lintels)	 Key 1. Structural anchor 2. Anchor point
A2	Structural anchors designed to be secured to inclined roofs	 Key 1. Structural anchors 2. Anchor point
B	Transportable temporary anchor devices	 Key 2. Anchor point



Class	Description	Example
C	Anchor devices employing horizontal flexible lines	 Key 1. Extremity structural anchor 2. Intermediate structural anchor 3. Mobile anchor point 4. Anchor line
D	Anchor devices employing horizontal rigid anchor rails	 Key 1. Anchor rail 2. Mobile anchor point
E	Deadweight anchors for use on horizontal surfaces	 Key 1. Anchor point

➔ General requirements for anchor devices

All anchor devices shall be so designed as to ensure that it is not possible for correctly connected personal protective equipment to become detached unintentionally. Besides, different elements of an anchor device shall be such that they cannot appear to be correctly assembled without being positively locked together. All metallic parts of anchor devices shall comply with the corrosion protection of EN 362:1992 to ensure they are enduring and safe for use, particularly those that are to be used in outdoor environment.



➔ Strength tests for anchor devices

Anchor devices shall meet the static strength and dynamic strength tests requirements under the BS EN795:1997 standard to ensure they possess sufficient strength for safe use.

Table 1: Requirements of strength tests

Class	Test description and requirement		Test procedure
A1	Static strength	Apply and maintain for 3 minutes 10kN force. Observe if the anchor device can hold the force	According to clause 5.2.1 of BS EN795
	Dynamic strength	Secure one end of the test lanyard to the anchor device and the other end to a 100 kg mass. Allows the mass falls freely through 2.5 m. Observe if the mass is arrested	According to clause 5.3.2 of BS EN795
A2	Static strength	Apply and maintain for 3 minutes 10kN force. Observe if the anchor device can hold the force	According to clause 5.2.2 of BS EN795
	Dynamic strength	Attach the anchor device at an angle no greater than 20° from vertical. Secure one end of the test lanyard to the anchor device and the other end to a 100 kg mass. Allows the mass falls freely through 2.5 m. Observe if the mass is arrested	According to clause 5.3.3 of BS EN795
B	Static strength	Apply and maintain for 3 minutes 10kN force. Observe if the anchor device can hold the force	According to clause 5.2.3 of BS EN795
	Dynamic strength	Secure one end of the test lanyard to the anchor device and the other end to a 100 kg mass. Allows the mass falls freely through 2.5 m. Observe if the mass is arrested and if the device remains stable	According to clause 5.3.2 of BS EN795



Class	Test description and requirement		Test procedure
C	Static strength	Test to 1.5 times the manufacturer's permitted designed force and maintain for 3 min. Observe if the anchor device (including anchor line and structural anchors) can hold the force	According to clause 5.2.4 of BS EN795
	Dynamic strength	Secure one end of the test lanyard to the anchor device and the other end to a 100 kg mass and test to differing system length and differing span lengths. Observe if the line tension and deflection vary by no more than $\pm 20\%$ from that determined by the manufacturer's method of prediction	According to clause 5.3.4.2 of BS EN795
D	Static strength	Apply and maintain for 3 minutes 10kN force (if the manufacturer's instructions permit two or more persons to use the device simultaneously, apply 1 kN additional force for each additional person). Observe if the anchor device can hold the force	According to clause 5.2.5 of BS EN795
	Dynamic strength	Secure one end of the test lanyard to the anchor device and the other end to a 100 kg mass. Allows the mass falls freely through 2.5 m. Observe if the mass is arrested	According to clause 5.3.5 of BS EN795
E	Dynamic strength	Attach the deadweight anchor device and a 100 kg mass by means of a wire rope of 8 mm diameter and route the wire rope over the pulleys. Release the drop mass at 2.5 m height. Observe: • if the mass is arrested • if the displacement of the center of mass of the deadweight anchor device does not exceed 1 m • if the vertical displacement of the mass does not exceed 1 m after 3 min Repeat the test for • each critical direction in which an arrest force could be applied • different type of construction material and conditions for which the manufacturer claims suitability	According to clause 5.3.5 of BS EN795

Personal Fall Protection Equipment - Static Strength Test on Anchor Device

Customer	:	Ramset Fasteners (HK) Ltd	Report No	:	PIL250507-00737
Address	:	Unit D, 22/F, Capital Trade Centre, 62 Tsun Yip Street, Hong Kong	Report Date	:	10 May 2025
Project	:	-	Page No	:	1 of 3
			Test Method	:	BS EN 795 2012 cl 5.3.4
Anchor Device	:	Ramset Safety Ring Anchor PSA12SS	Date of Test	:	07 May 2025
Description*	:	and Concrete Insert TCM12RSS75			

Test Reference	Location	Specified Load (kN)	Applied Load (kN)	Holding Time (minutes)	Failure Mode (see note D)	Remarks
1	Cast-in concrete block 1000mm x 1000mm x 300mm	12.0	12.3	2.0	P	-
2		12.0	12.3	2.0	P	-
3		12.0	12.3	2.0	P	-

Notes :

A) Test Apparatus :

Load Cell :	PI10764
Load Indicator :	PI10904
Hydraulic Cylinder :	RSCH-302
Hydraulic Pump :	P80

B) Substrate member* :

Concrete Grade : 30 MPa

C) Failure Modes :

P = No sign of failure in anchor and/or substrate member	F1 = Breaking of anchor
F2 = Failure of substrate member in a shear cone	F3 = Pull out of anchor
F4 = Sign of separation, plastic deformation or deleterious effect of anchor	
F5 = Failure in structural member with crack radiates outward from anchor/bar	
F6 = Other failure mode(s) :	

Remarks:

* Information provided by customer

Tested By W.H. KwokChecked By Approved Signatory 

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Sample 1 Set Up



Sample 1 After Test



Sample 2 Set Up



Sample 2 After Test



STANGERS

Report No.: PIL250507-00737



Sample 3 Set Up



Sample 3 After Test

Report Issued Date: 10-05-2025

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**STANGERS**

Report No : PIL250508-00740

Personal Fall Protection Equipment - Dynamic Strength Test on Anchor Device

Customer : Ramset Fasteners (HK) Ltd Report No : PIL250508-00740

Address : Unit D, 22/F, Capital Trade Centre, Report Date : 10 May 2025
62 Tsun Yip Street, Hong Kong Page No : 1 of 3

Project : - Test Method : BS EN 795 2012 cl 5.2.2.2

Anchor Device : Ramset Safety Ring Anchor PSA12SS Date of Test : 08 May 2025
Description * and Concrete Insert TCM12RSS75

Test Reference	Location	Dead Weight (kg)	Free Drop Height (m)	Observation (Note C)	Remark
1	Cast-in concrete block 1000mm x 1000mm x 300mm	100	2.0	P	-

Notes :

A) Test Apparatus : 100kg dead weight and about 4.0m lanyard

B) Substrate member * : Concrete Grade 30MPa

C) Failure Modes :

P = No sign of failure in anchor and/or substrate member F1 = Breaking of anchor
F2 = Failure of substrate member in a shear cone F3 = Pull out of anchor
F4 = Sign of sepearation, plastic deformation or deleterious effect of anchor
F5 = Failure in structural member with crack radiates outward from anchor/bar
F6 = Other failure mode(s) :

Remarks:

* information provided by customer

Tested By W.H. KwokChecked By Approved Signatory 

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Report Issued date : 10-05-2025

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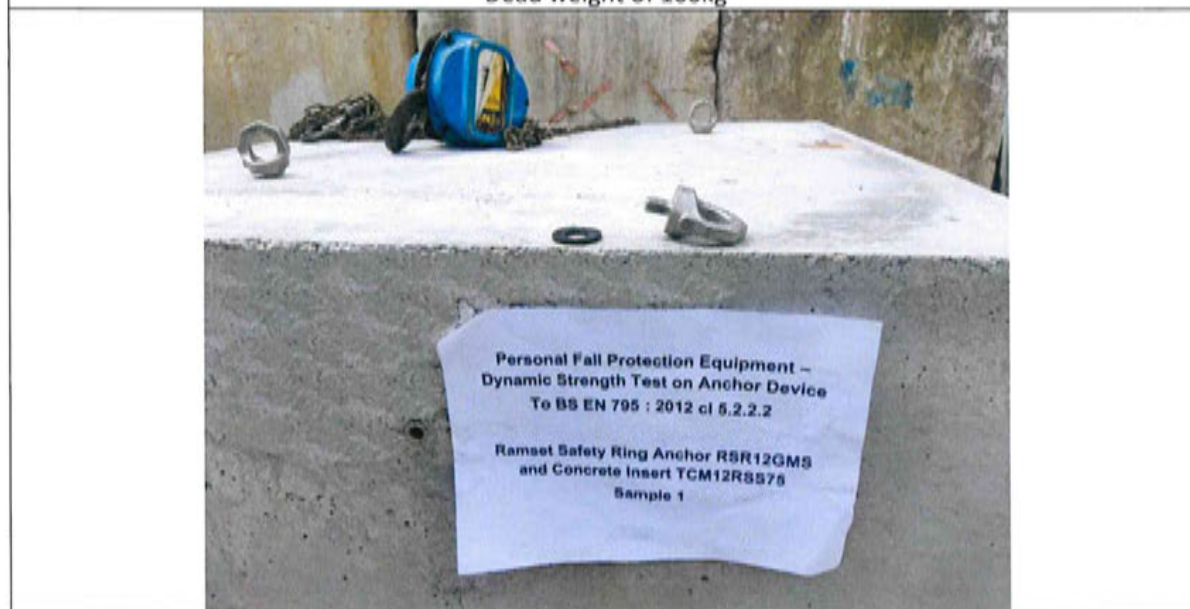


STANGERS

Report No : PIL250508-00740



Dead weight of 100kg



Sample 1: anchor

Report Issued date : 10-05-2025

Page 2 of 3



STANGERS

Report No : PIL250508-00740



Set up of dead weight for 2.0m drop height



Free release of dead weight for 2.0m drop height

Report Issued date : 10-05-2025

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RAMSET - SAFETY RING ANCHOR SYSTEM

PROJECT NAME	PRODUCT	YEAR	TYPE
油塘內地段45號住宅發展項目	RSR12SS	2024	
大角嘴角祥街25-29號	RSR12SS	2023	
KAI TAK SPORTS PARK	RSR12SS	2022	
中環花園道山頂纜車站	RSR12SS	2022	
大角嘴角祥街項目 (恒基) 利奧坊	RSR12SS / RSR12GM	2021	
M+ MUSEUM	RSR12GM	2020	ASD
北角馬寶道3號	RSR12GM	2019	
HK AIRPORT EXTENSION	RSR12GM	2019	HKAA
蝴蝶邨	RSR12GM	2019	HOUSING
葵涌祖堯邨	RSR12GM	2019	
曾咀花園	RSR12GM	2019	
LIANTANG / HEUNG YUEN WAI BCP	RSR12GM	2018	HIGHWAYS
廣珠澳大橋(人工島)	RSR12GM	2018	
MTRC XRL 810A	RSR12GM	2018	MTRC
元朗朗晴居	RSR12GM	2017	
黃大仙竹園北村	RSR12GM	2017	HOUSING
紅磡海濱廣場二座	RSR12GM	2017	
HOUSING MAINTENANCE, WONG TAI SIN	RSR12GM	2017	HOUSING
HY/2014/06	RSR12GM	2017	HIGHWAYS
LIANTANG, NE/2014/03	RSR12GM	2017	
土瓜灣下鄉道住宅發展 (永興)	RSR12GM	2017	

RAMSET - SAFETY RING ANCHOR SYSTEM

PROJECT NAME	PRODUCT	YEAR	TYPE
屯門湖景村	RSR12GM	2017	HOUSING
MTRC XRL 811B	RSR12GM	2017	MTRC
NO 1-1A HA HEUNG RD, 42A-44 CHI KIANG ST, TOKWAWAN	RSR12GM	2017	
MTR SHATIN TO CENTRAL LINK, CONTRACT 1108, KAI TAK STATION	RSR12GM	2016	MTRC
TKO 66D2 (SHK)	RSR12GM	2016	SHK
MTR KWUN TONG LINE EXT - YAU MA TEI TO WHAMPOA TUNNELS AND HOMANTIN STATION	RSR12GM	2015	MTRC
屯門望后石污水廠	RSR12GM	2015	DSD
CONSTRUCTION INDUSTRY COUNCIL, TRAINING	RSR12GM	2015	
COMMERCIAL DEVELOPMENT AT HUNG HOM	RSR12GM	2015	
XRL 810A WEST KOWLOON TERMINUS STATION NORTH	RSR12GM	2014	MTRC
HAPPY VALLEY, HK JOCKEY CLUB	RSR12GM	2014	
葵涌大窩口村	RSR12GM	2014	HOUSING
將軍澳消防訓練學校	RSR12GM	2014	ASD
INTERNATIONAL FINANCE CENTRE II	RSR12GM	2013	
KAI TAK DEVELOPMENT 1B	RSR12GM	2013	HOUSING
TSEUNG KWAN O AREA 65B (NO.20100086)	RSR12GM	2013	HOUSING
1/WSD/12W-J014-W9020	RSR12GM	2013	WSD
11-39 BLUE POOL ROAD, HAPPY VALLEY	RSR12GM	2012	
上環永樂街5號	RSR12SS	2012	