



Marmotest S.r.l.s.
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N° 1273310

TEST REPORT

MM0725C170

ASTM C170- STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF DIMENSION STONE

CLIENT

MARMI MINUCCIANO SRL
Via Primo Tonini, 82/A,
55030 Minucciano LU

PETROGRAPHIC NAME [ASTM C119]

CALCITIC MARBLE

TRADE NAME

CIPOLLINO MINUCCIANO

SPECIMEN QUANTITIES

5 DRY
5 WET

TEST RESULTS

**COMPRESSIVE
STRENGTH**

DRY: 58 MPa [8458 psi]
WET: 57 MPa [8203 psi]

***MINIMUM VALUE REQUIRED (ASTM
C503 Standard Specification for Marble
Dimension Stone)***

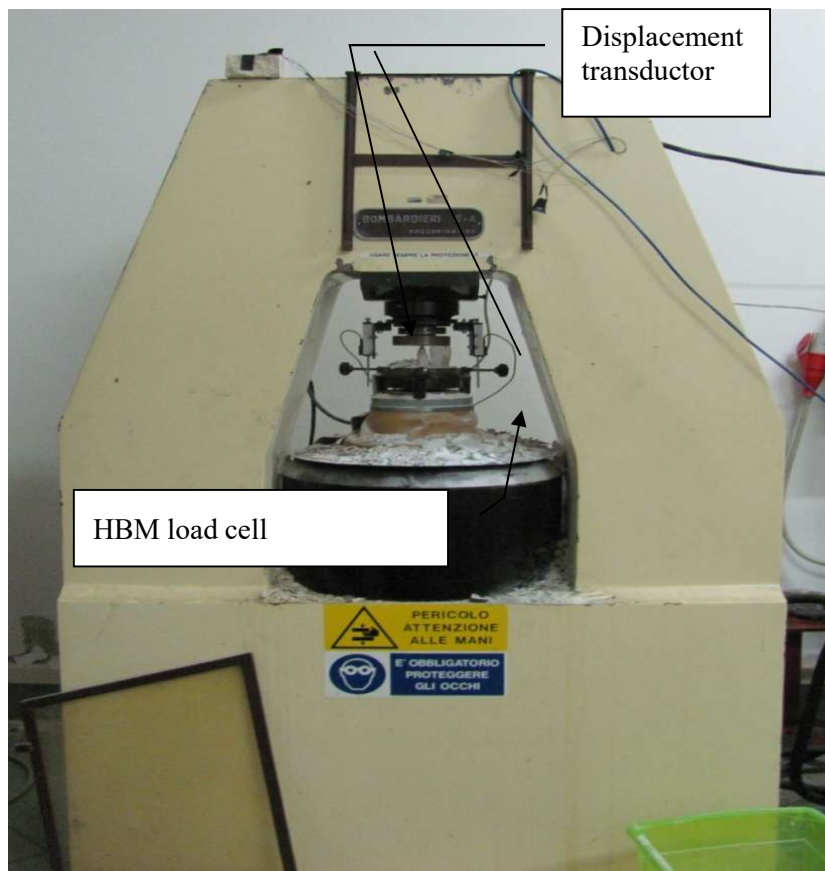
55 MPa [8000 psi]

Carrara - August 06, 2025

Apparatus

The testing machine is a special rigid machine "Bombardieri", with a MOOG servovalve, controlled by a real time digital platform C-Rio with FPGA technology.

The load is measured twice, the feedback signal is from an HBM load cell model C4 (2204600 lbf of nominal load) while the calibration cell is an Metior Load Cell model CVP (2204600 lbf of nominal load). Load cell data acquisition (A/D) and displacement is performed by National Instruments NI 9237 24-Bit module. Sample frequency is 2 milliseconds. The displacement is measured by 2 linear potentiometer.



Support blocks

The support for the specimens is installed on 2 special ball bearing.

Measuring instruments

Specimen size has been measured by a digital caliber "Mitutoyo Absolute" model CD-15PKX (serial no. 13185236) with a precision of 0.01 mm (0.39 mil). Measurements have been made using the international System of units (SI).

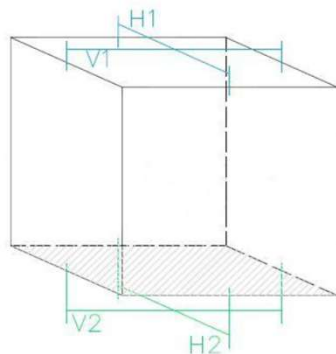
Conditioning

Dry conditions - The specimens are dried in a ventilated oven at $140^{\circ}\text{F} \pm 4^{\circ}\text{F}$ ($60 \pm 2^{\circ}\text{C}$) for 48 h.

Wet conditions - before testing the specimens have been conditioned for 48 h in water at $72^{\circ}\text{F} \pm 4^{\circ}\text{F}$ [$22 \pm 2^{\circ}\text{C}$]

Load gradient

Strain gradient is kept under 100 psi/s [690 kPa/s] until specimen failure.



Compressive Strength Co - DRY condition

	H1	V1	H2	V2	LOAD KG	LOAD N	Co MPa
MM0725C170D_164	59,81	60,24	60,12	60,12	20925	205272	57
MM0725C170D_165	60,27	59,62	59,65	59,65	20435	200467	56
MM0725C170D_166	59,50	60,53	59,39	60,42	20066	196843	55
MM0725C170D_167	59,98	#RIF!	60,01	60,25	23843	233903	65
MM0725C170D_168	59,84	60,01	60,17	60,34	21672	212604	59
Average MPa							58
Standard deviation MPa							4

Compressive Strength Co - WET condition

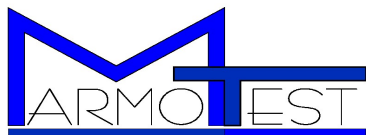
	H1	V1	H2	V2	LOAD KG	LOAD N	Co MPa
EM8023C170W_01	60,10	59,26	60,07	59,97	20189	198052	55
EM8023C170W_02	60,14	60,00	60,06	59,87	22079	216595	60
EM8023C170W_03	59,24	60,10	59,97	60,08	20175	197917	55
EM8023C170W_04	59,19	59,62	60,06	59,72	20958	205598	58
EM8023C170W_05	59,72	59,77	59,81	59,27	19701	193270	54
Average MPa							57
Standard deviation MPa							2

Laboratory manager
Stefano Bianchini
mining engineer



Laboratory supervisor
Brunello Forfori





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membership number
1273310

C 170

DRY

ND

Number of specimens 5

Date of conditioning 28/07/2025

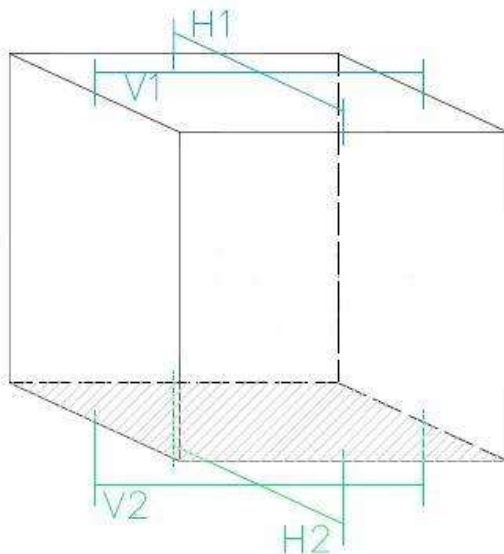
Date of measurement 31/07/2025

Date of test 31/07/2025

Conditioning operator 8

Measurement operator 8

Test operator 8



Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170D_01	2,35	2,37	5,58	2,37	2,37	5,60	5,59	46.131	8.250
MM0725C170D_02	2,37	2,35	5,57	2,35	2,35	5,52	5,54	45.051	8.131
MM0725C170D_03	2,34	2,38	5,58	2,34	2,38	5,56	5,57	44.236	7.942
MM0725C170D_04	2,36	2,35	5,55	2,36	2,37	5,60	5,58	52.565	9.430
MM0725C170D_05	2,36	2,36	5,57	2,37	2,38	5,63	5,60	47.779	8.540

C average 8.459 psi C std. dev. 585 psi

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170D_01	59,81	60,24	3.602,95	60,12	60,12	3.614,41	3.608,68	20.925	205.272	56,9
MM0725C170D_02	60,27	59,62	3.593,30	59,65	59,65	3.558,12	3.575,71	20.435	200.467	56,1
MM0725C170D_03	59,50	60,53	3.601,53	59,39	60,42	3.588,34	3.594,94	20.066	196.843	54,8
MM0725C170D_04	59,98	59,68	3.579,61	60,01	60,25	3.615,60	3.597,60	23.843	233.903	65,0
MM0725C170D_05	59,84	60,01	3.591,00	60,17	60,34	3.630,66	3.610,83	21.672	212.604	58,9

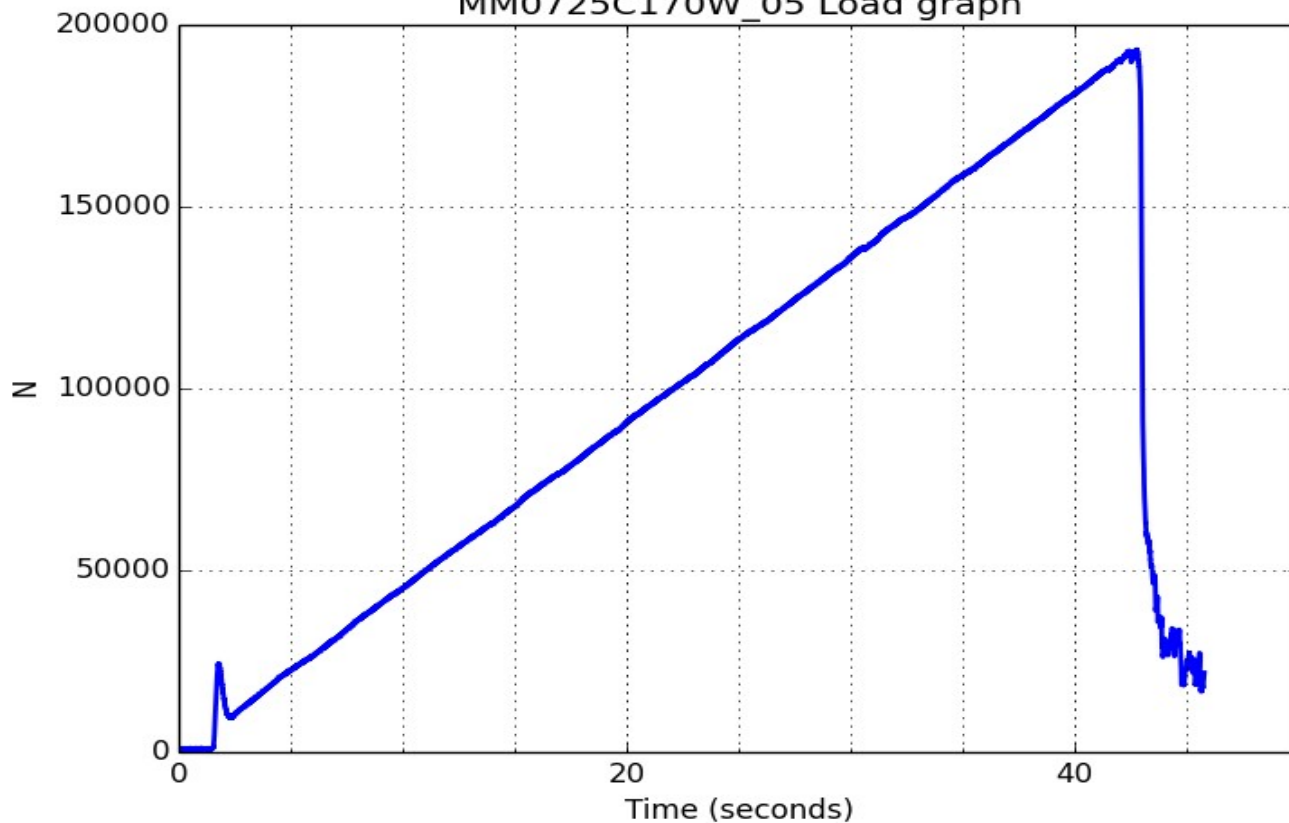
C average 58,3MPa C std. dev. 4,0MPa

NOTES

Specimen MM0725C170D_01 test result



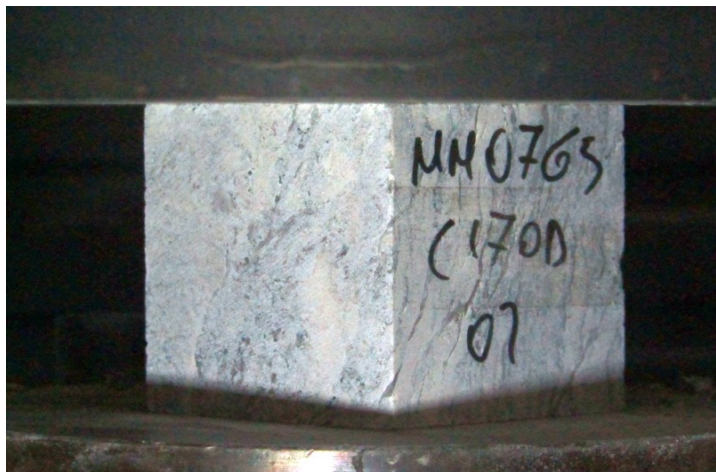
MM0725C170W_05 Load graph



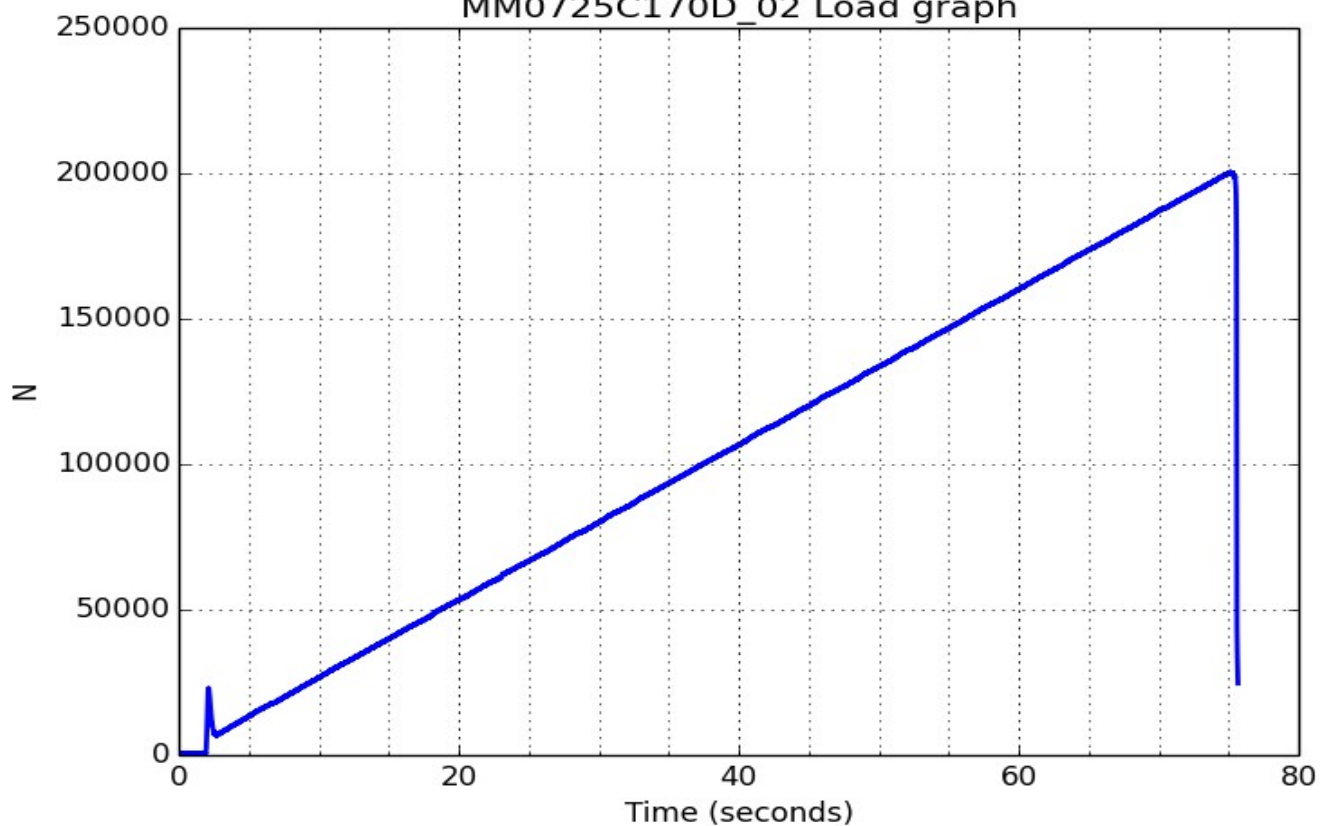
Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170D_01	2,35	2,37	5,58	2,37	2,37	5,60	5,59	46.131	8.250

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170D_01	59,81	60,24	3.602,95	60,12	60,12	3.614,41	3.608,68	20.925	205.272	56,9

Specimen MM0725C170D_02 test result



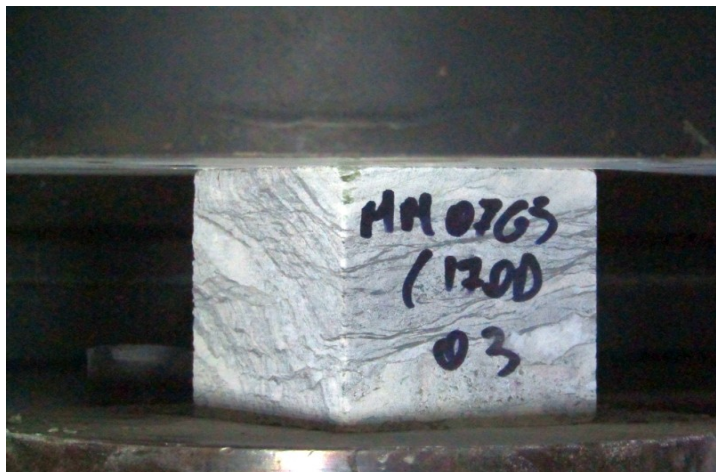
MM0725C170D_02 Load graph



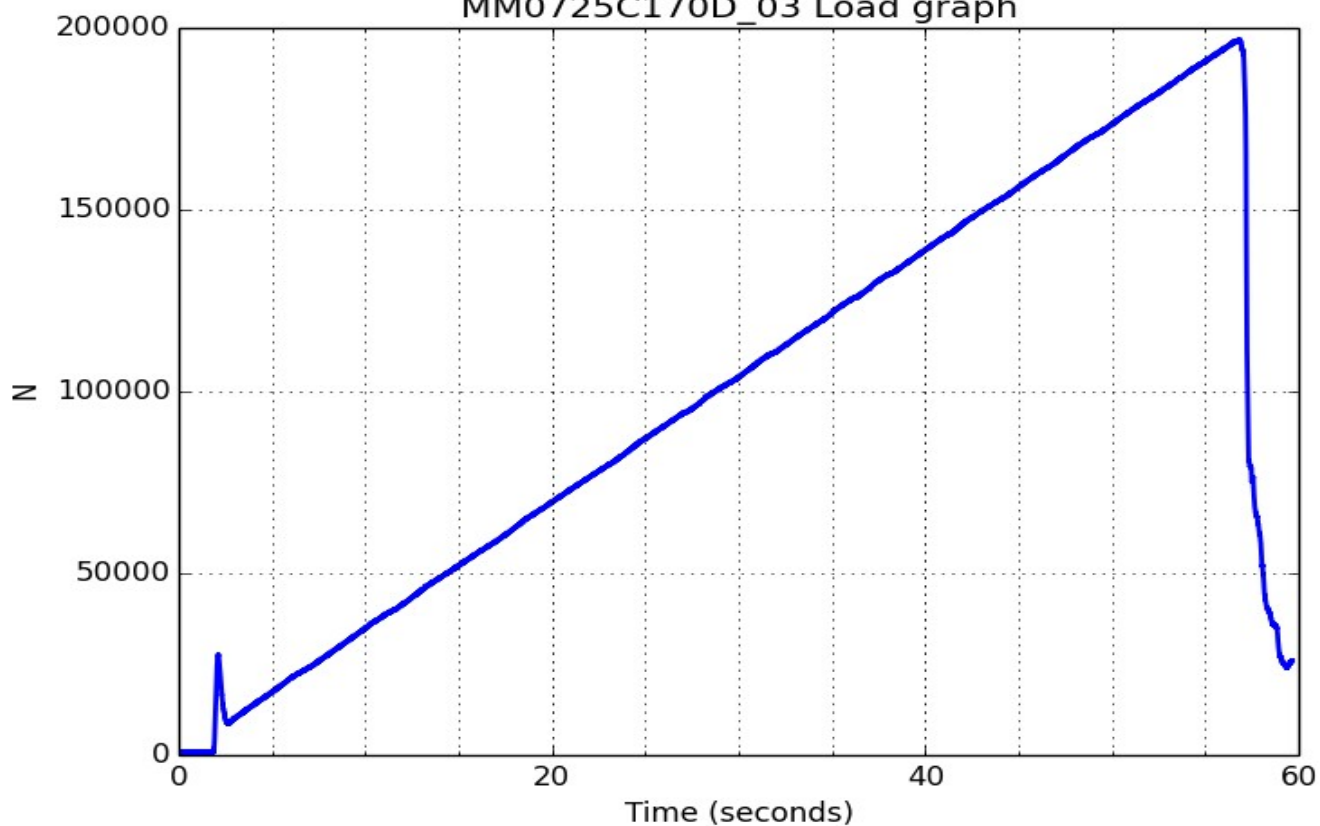
Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170D_02	2,37	2,35	5,57	2,35	2,35	5,52	5,54	45.051	8.131

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170D_02	60,27	59,62	3.593,30	59,65	59,65	3.558,12	3.575,71	20.435	200.467	56,1

Specimen MM0725C170D_03 test result



MM0725C170D_03 Load graph



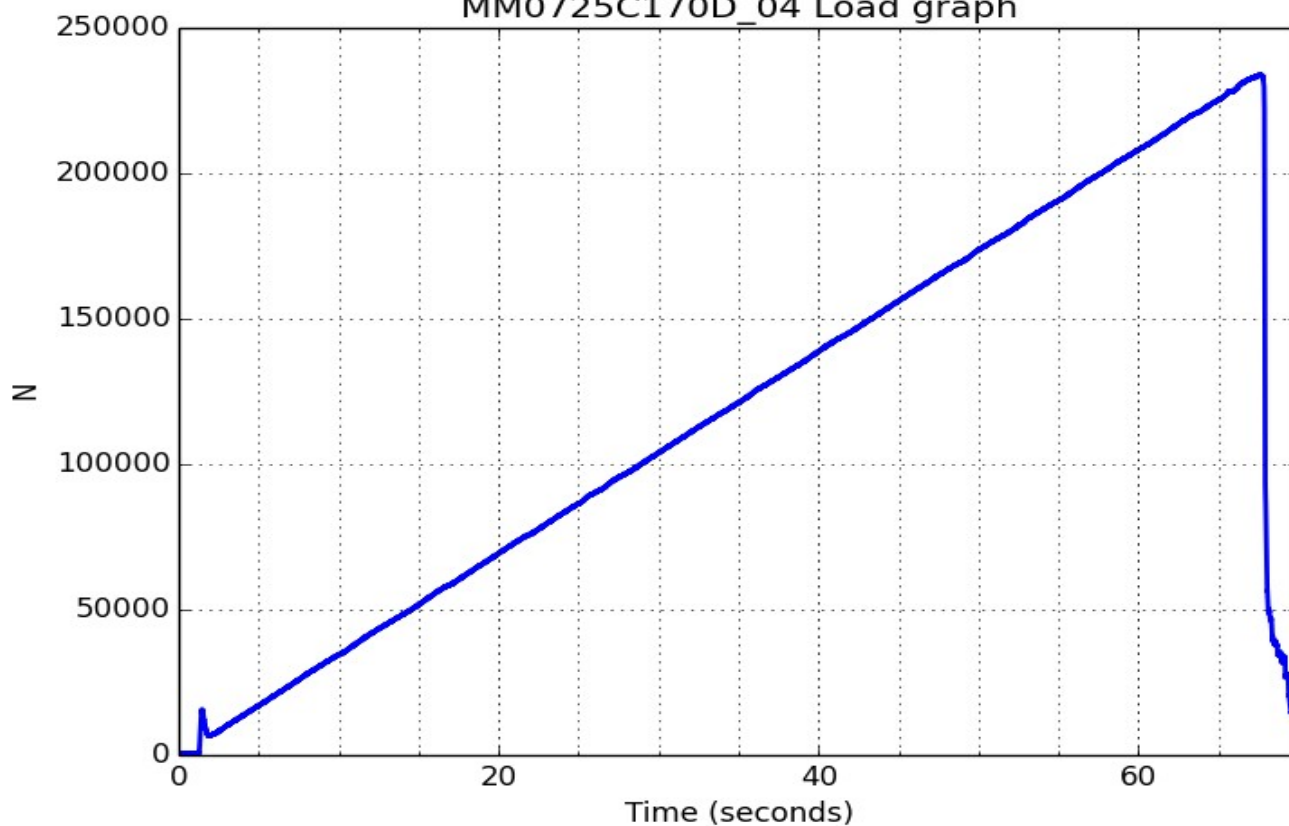
Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170D_03	2,34	2,38	5,58	2,34	2,38	5,56	5,57	44.236	7.942

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170D_03	59,50	60,53	3.601,53	59,39	60,42	3.588,34	3.594,94	20.066	196.843	54,8

Specimen MM0725C170D_04 test result



MM0725C170D_04 Load graph



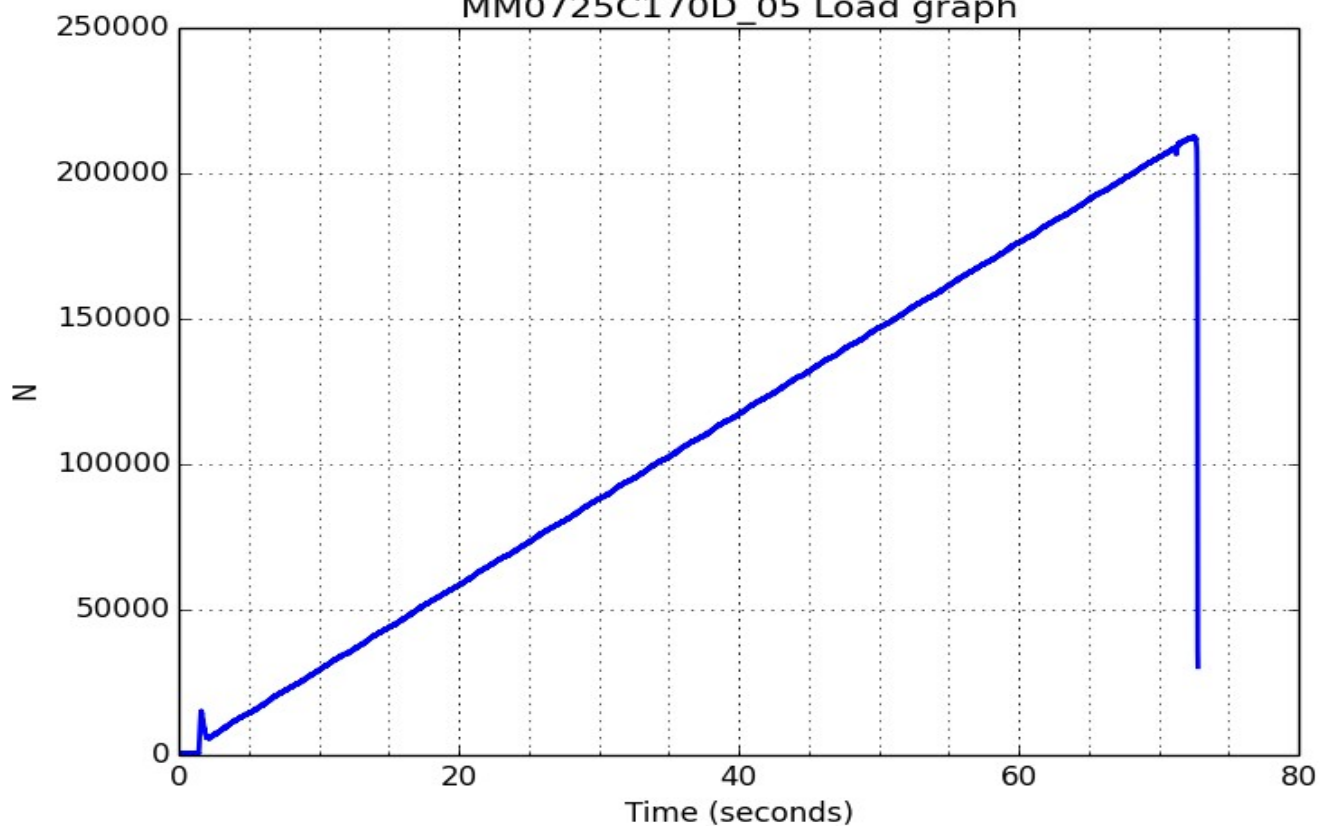
Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170D_04	2,36	2,35	5,55	2,36	2,37	5,60	5,58	52.565	9.430

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170D_04	59,98	59,68	3.579,61	60,01	60,25	3.615,60	3.597,60	23.843	233.903	65,0

Specimen MM0725C170D_05 test result

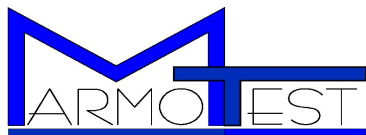


MM0725C170D_05 Load graph



Name	H1 [in]	V1 [in]	SURF1 [in²]	H2 [in]	V2 [in]	SURF2 [in²]	AVG SURF [in²]	BRK LOAD [lbf]	C [psi]
MM0725C170D_05	2,36	2,36	5,57	2,37	2,38	5,63	5,60	47.779	8.540

Name	H1 [mm]	V1 [mm]	SURF1 [mm²]	H2 [mm]	V2 [mm]	SURF2 [mm²]	AVG SURF [mm²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170D_05	59,84	60,01	3.591,00	60,17	60,34	3.630,66	3.610,83	21.672	212.604	58,9



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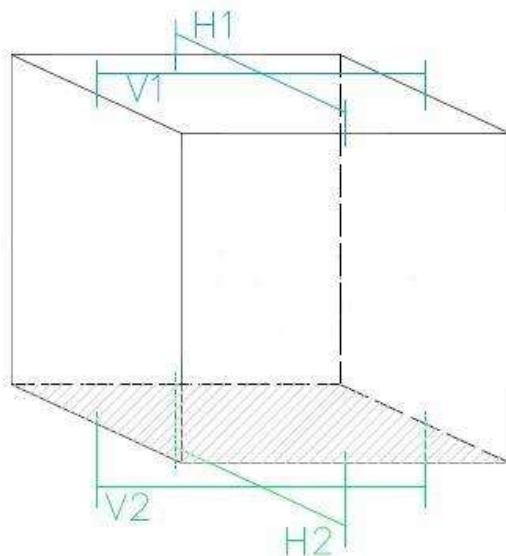
Date of measurement 31/07/2025

Date of test 31/07/2025

Conditioning operator 8

Measurement operator 8

Test operator 8



Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170W_01	2,37	2,33	5,52	2,36	2,36	5,58	5,55	44.508	8.019
MM0725C170W_02	2,37	2,36	5,59	2,36	2,36	5,57	5,58	48.675	8.721
MM0725C170W_03	2,33	2,37	5,52	2,36	2,37	5,58	5,55	44.478	8.015
MM0725C170W_04	2,33	2,35	5,47	2,36	2,35	5,56	5,51	46.204	8.381
MM0725C170W_05	2,35	2,35	5,53	2,35	2,33	5,49	5,51	43.433	7.880

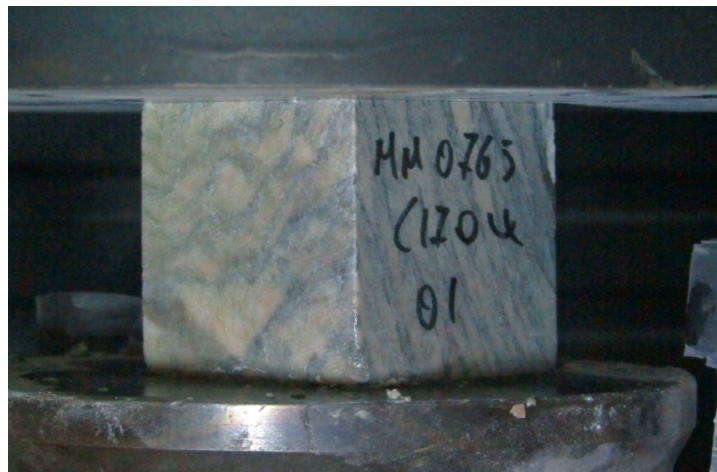
C average 8.203 psi C std. dev. 344 psi

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170W_01	60,10	59,26	3.561,53	60,07	59,97	3.602,40	3.581,96	20.189	198.052	55,3
MM0725C170W_02	60,14	60,00	3.608,40	60,06	59,87	3.595,79	3.602,10	22.079	216.595	60,1
MM0725C170W_03	59,24	60,10	3.560,32	59,97	60,08	3.603,00	3.581,66	20.175	197.917	55,3
MM0725C170W_04	59,19	59,62	3.528,91	60,06	59,72	3.586,78	3.557,85	20.958	205.598	57,8
MM0725C170W_05	59,72	59,77	3.569,46	59,81	59,27	3.544,94	3.557,20	19.701	193.270	54,3

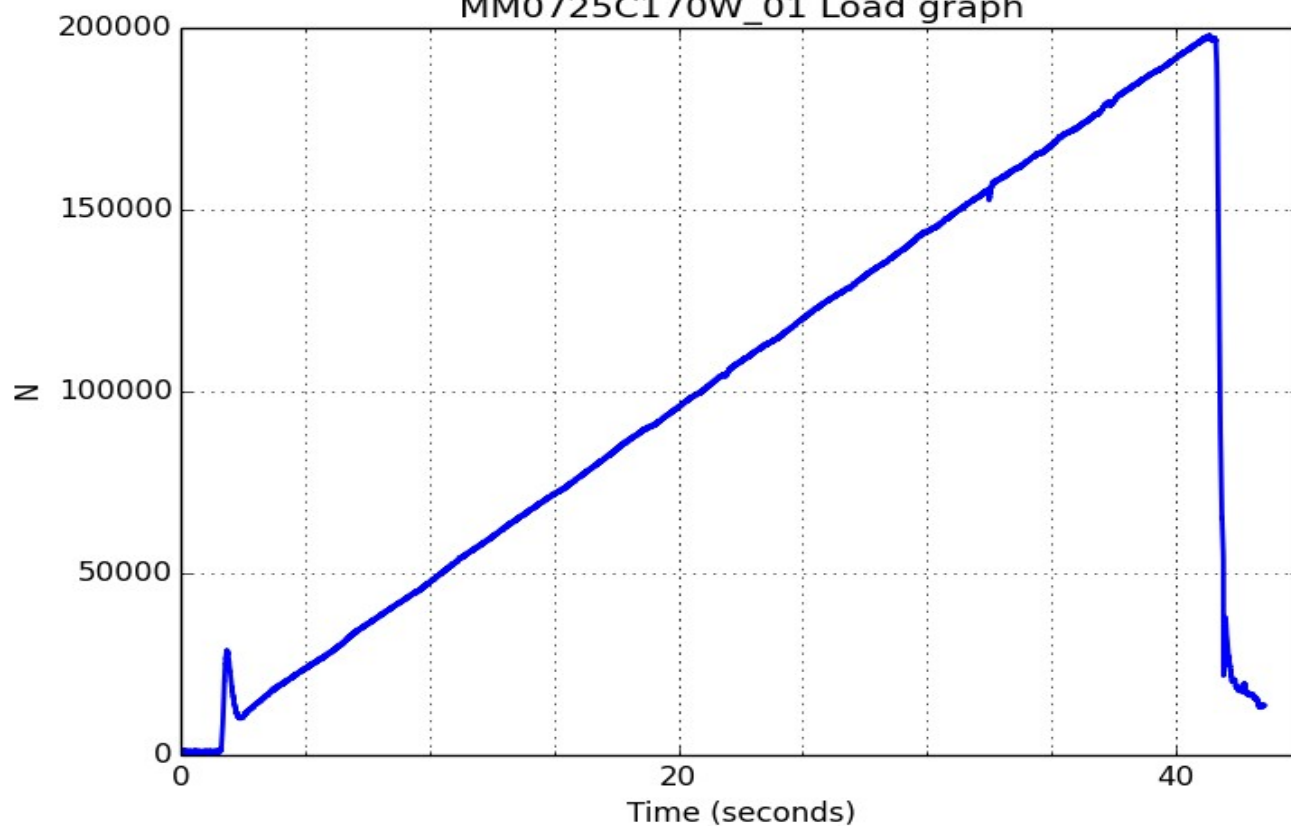
C average 56,6MPa C std. dev. 2,4MPa

NOTES

Specimen MM0725C170W_01 test result



MM0725C170W_01 Load graph



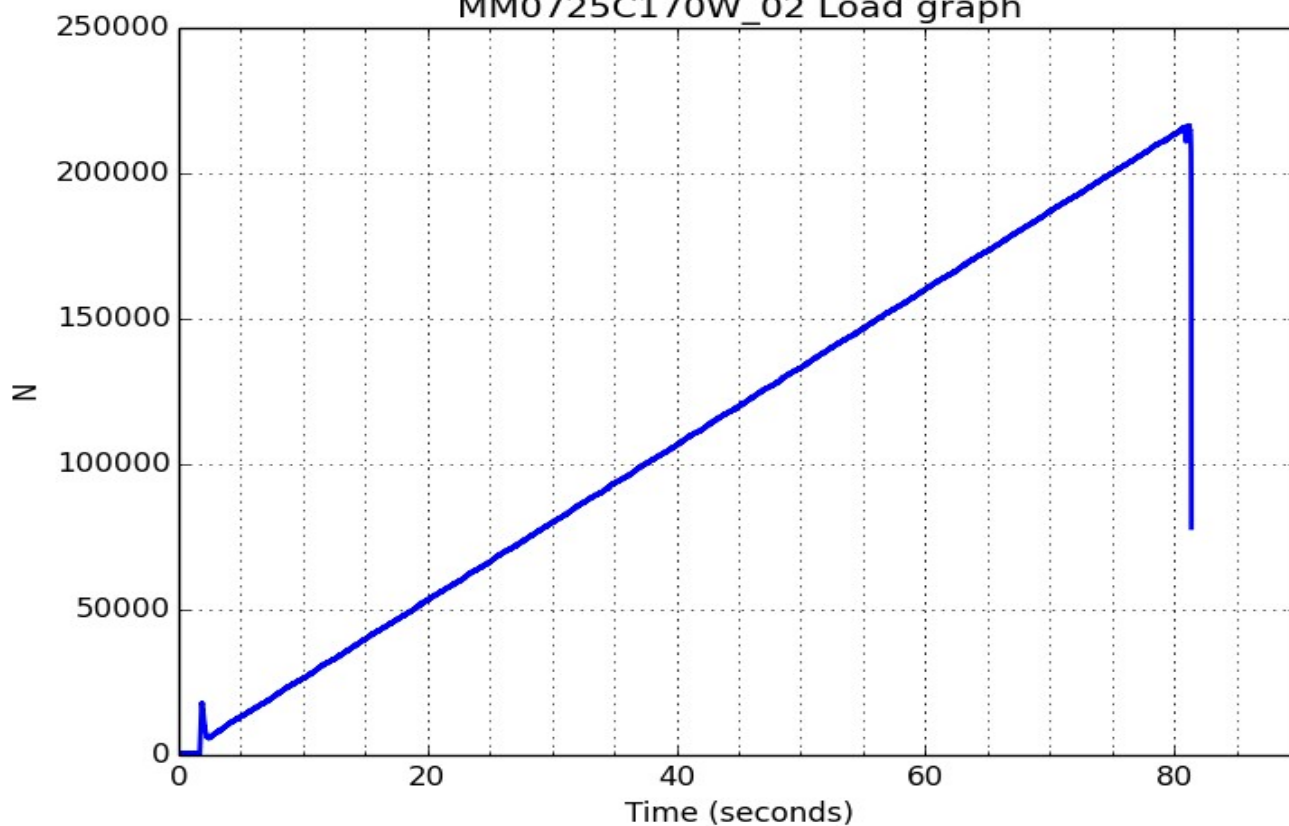
Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170W_01	2,37	2,33	5,52	2,36	2,36	5,58	5,55	44.508	8.019

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170W_01	60,10	59,26	3.561,53	60,07	59,97	3.602,40	3.581,96	20.189	198.052	55,3

Specimen MM0725C170W_02 test result



MM0725C170W_02 Load graph



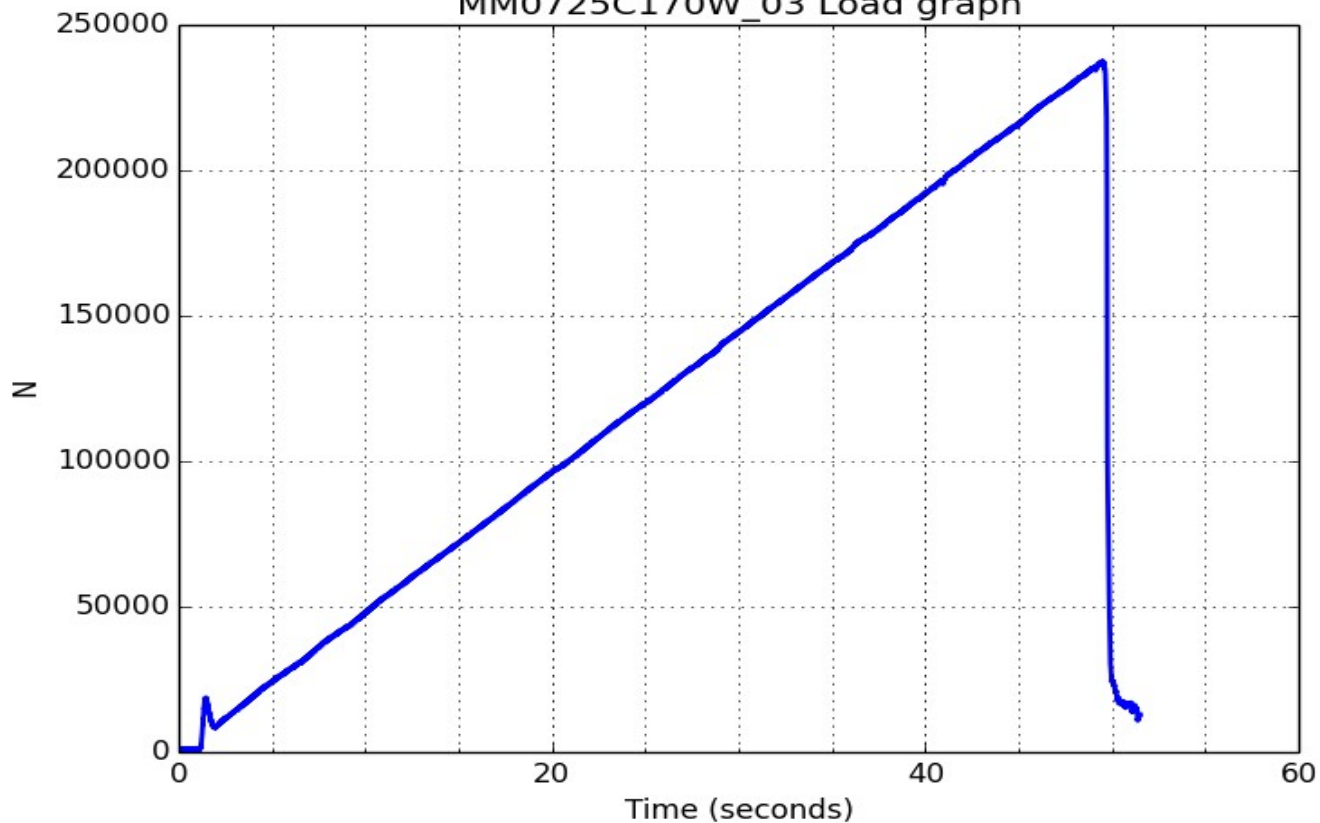
Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170W_02	2,37	2,36	5,59	2,36	2,36	5,57	5,58	48.675	8.721

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170W_02	60,14	60,00	3.608,40	60,06	59,87	3.595,79	3.602,10	22.079	216.595	60,1

Specimen MM0725C170W_03 test result



MM0725C170W_03 Load graph



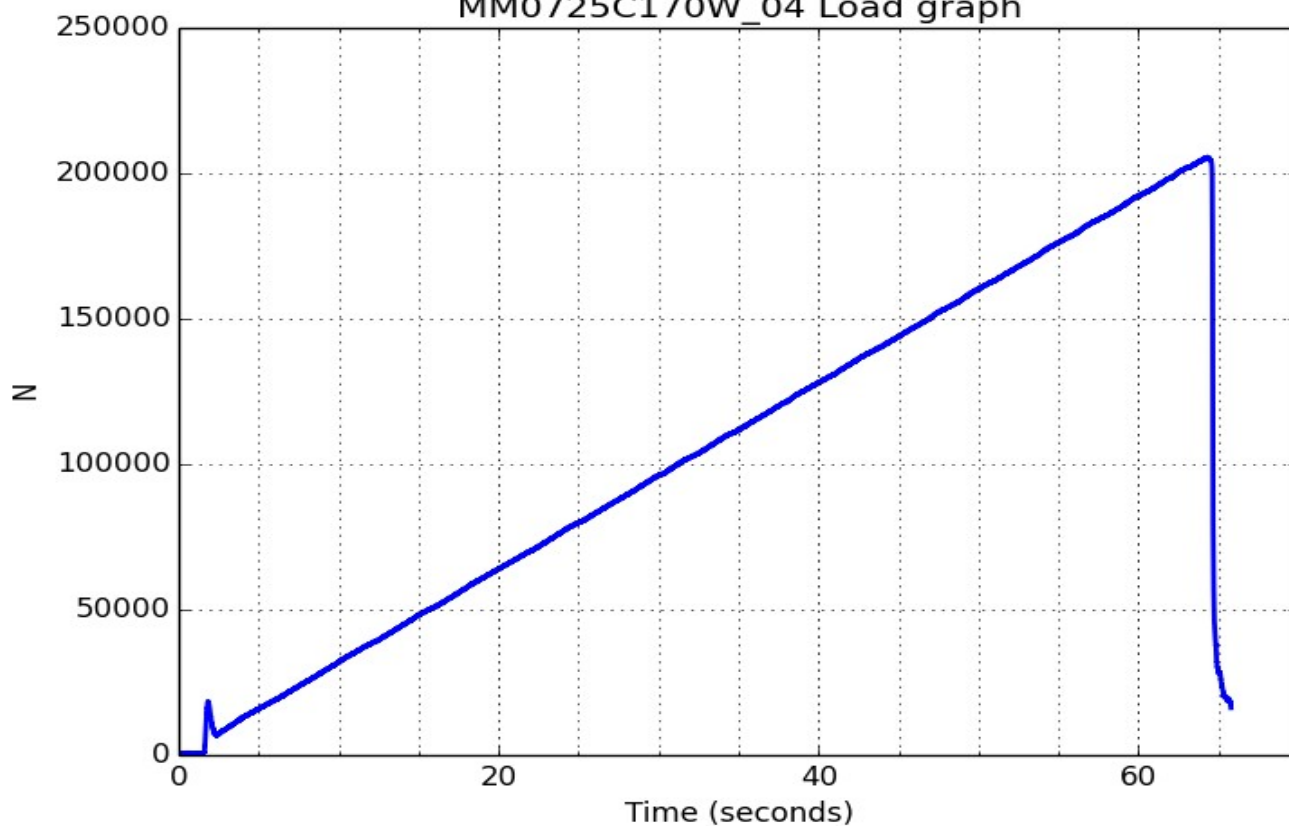
Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170W_03	2,33	2,37	5,52	2,36	2,37	5,58	5,55	44.478	8.015

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170W_03	59,24	60,10	3.560,32	59,97	60,08	3.603,00	3.581,66	20.175	197.917	55,3

Specimen MM0725C170W_04 test result



MM0725C170W_04 Load graph



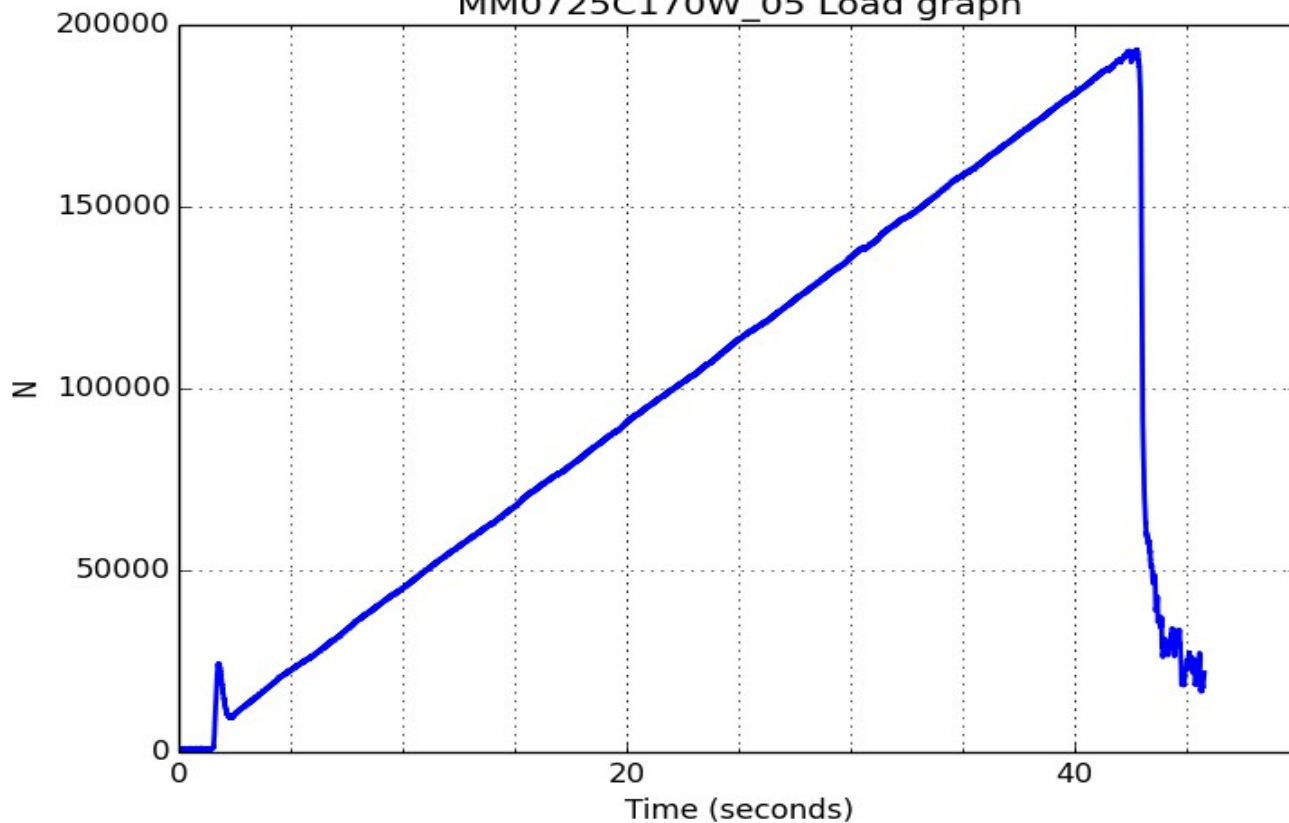
Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170W_04	2,33	2,35	5,47	2,36	2,35	5,56	5,51	46.204	8.381

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170W_04	59,19	59,62	3.528,91	60,06	59,72	3.586,78	3.557,85	20.958	205.598	57,8

Specimen MM0725C170W_05 test result



MM0725C170W_05 Load graph



Name	H1 [in]	V1 [in]	SURF1 [in ²]	H2 [in]	V2 [in]	SURF2 [in ²]	AVG SURF [in ²]	BRK LOAD [lbf]	C [psi]
MM0725C170W_05	2,35	2,35	5,53	2,35	2,33	5,49	5,51	43.433	7.880

Name	H1 [mm]	V1 [mm]	SURF1 [mm ²]	H2 [mm]	V2 [mm]	SURF2 [mm ²]	AVG SURF [mm ²]	LOAD [Kg]	LOAD [N]	C [MPa]
MM0725C170W_05	59,72	59,77	3.569,46	59,81	59,27	3.544,94	3.557,20	19.701	193.270	54,3