

16 JUIN. 2026



Rebar Steel "FE 500" manufactured by METAFRIQUE STEEL S.
A. & Used in VARIOUS INFRASTRUCTURE Projects IN
CAMEROON] / Quote N° 040 dated 5th JUNE 2026

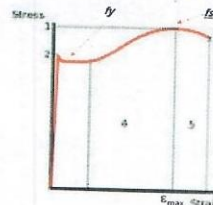
11-juin-26

Collected on 5-juin-26

Received on **5-juin-26**

NF EN 10002-1 [Part 1: Test at Room Temperature]

Tests carried out on **11-juin-26**



INSPECTION REPORT OF STEEL BAR & collected by METAFRIQUE STEEL S.A.

- | | |
|--|---|
| - Measurements of nominal Diameter | - Measurements of the metric weights and lengths of the bars |
| - Determination of elastic limit f_y | - Determination of failure stress f_u / - Measurement of Elongation (Strain), A_5 |

f_y and f_s Values are calculated by dividing loads obtained to the nominal section and not to the real (striction) section

Observations about Steel Grades

Observations about Steel Grades			EUROCODE 2 (Concrete structural Calculation)		ELONGATION under Maximum load ϵ_{max}	GAP between standard diameter with actual steel (mm)
Diameter mm	NF EN 10002-1 [Part I: Test at Room Temperature] Metric Grade	ASTM 615	Minimum Yield Strength (N/mm ²)	fs/fy		
5 $\phi \leq 12$						
14 $\phi \leq 20$					$\pm 6\%$	
25 $\phi \leq 40$					$\pm 5\%$	
8 TMT	Fe 500	GR 72	500	1.44 > 1.05	4% [Normal Ductility]	1.43% -> Conforme
10 TMT	Fe 500	GR 72	500	1.26 > 1.05	3.2% [Normal Ductility]	1.62% -> Conforme
12 TMT	Fe 500	GR 72	500	1.4 > 1.05	3.4% [Normal Ductility]	0.91% -> Conforme
14 TMT	Fe 500	GR 72	500	1.28 > 1.05	3.1% [Normal Ductility]	1.61% -> Conforme
16 TMT	Fe 500	GR 72	500	1.25 > 1.05	3.1% [Normal Ductility]	1.58% -> Conforme
20 TMT	Fe 500	GR 72	500	1.41 > 1.05	3.7% [Normal Ductility]	0.95% -> Conforme
25 TMT	Fe 500	GR 72	500	1.23 > 1.05	3.3% [Normal Ductility]	2.14% -> Conforme

NOTE: DUCTILE STRUCTURES

NOTE: DUCTILE STRUCTURE, WHERE IS CLOSE TO COLLAPSE, WARNS OF HIS POSITION IN UNDERGOING LARGE DEFORMATIONS AND LARGE CRACKS

NOTE: IF THE STRUCTURE IS FRAGILE, THE COLLAPSE TAKES PLACE WITHOUT PRIOR NOTICE, WITH SMALL DEFORMATION AND REDUCED CRACKING

REMINDER OF CONTROL METHODS FOR REINFORCED CONCRETE
french standard Title 1 of CCTG Part 4

The Elastic limit R_{el} , the guaranteed value R_{ga}

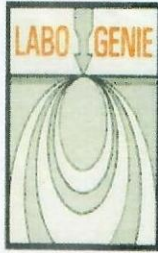
The probability of having a test result lower than the reference value should be at most 5%. For an application for approval covering 60 tests spread over 10 production lots. It had to be checked:

Rem- $2s \geq \text{Reg (guaranteed value)}$; s is the standard deviation
To satisfy a self-test: $2s \geq \text{Reg (guaranteed value)}$

The minimum value or lower bound: $\text{Remin} = \text{Reg} - 20 \text{ MPa}$

In case this condition was not satisfied, it must be verified by additional test, to bring the number of samples to 12 : $Rem1 - 2s1 \geq Remin$





Sheet of tensile tests of a standard steel specimen

Universal Testing Machine (UTM) LABOGENIE / Capacity 600 KN

Date of tests

11-juin-26

NF EN 10002-1 [Part 1: Test at Room Temperature]

Rebar Steel "FE 500" manufactured by METAFRIQUE STEEL S. A. & Used in VARIOUS INFRASTRUCTURE Projects IN CAMEROON / Quote N° 040 dated 5th JUNE 2026

Steel Diameter (mm)	Section (cm²)	Yield Point		Failure Point		Reference Pack
		Tensile Yield load, KN	Elastic limit (proportional limit), N/mm²	Failure tensile load (Mpa)	Ultimate stress (N/mm²)	
8 TMT	0.503	33.8	673	36.4	724.7	1
8 TMT	0.503	31.2	622	36.4	724.7	2
8 TMT	0.503	33.8	673	36.4	724.7	3
10 TMT	0.785	46.8	596	52.0	661.7	1
10 TMT	0.785	44.2	563	49.4	628.7	2
10 TMT	0.785	44.2	563	49.4	628.7	3
12 TMT	1.131	67.5	597	83.0	734.3	1
12 TMT	1.131	67.5	597	83.0	734.3	2
12 TMT	1.131	62.3	551	75.3	665.6	3
14 TMT	1.539	77.9	506	98.6	640.4	1
14 TMT	1.539	83.0	539	101.2	657.3	2
14 TMT	1.539	83.0	539	98.6	640.4	3
16 TMT	2.011	103.8	516	124.5	619.1	1
16 TMT	2.011	103.8	516	127.1	632.0	2
16 TMT	2.011	103.8	516	127.1	632.0	3
20 TMT	3.142	181.5	578	222.9	709.5	1
20 TMT	3.142	181.5	578	222.9	709.5	2
20 TMT	3.142	176.3	561	220.3	701.3	3
25 TMT	4.909	251.4	512	303.2	617.7	1
25 TMT	4.909	254.0	517	303.2	617.7	2
25 TMT	4.909	248.8	507	300.6	612.4	3

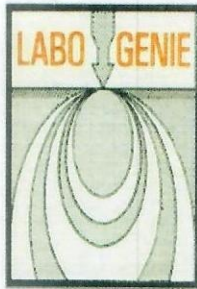
Lab Operator

FOTOUC FAUSTIN





TABLE DES DIMENSIONS DES FERS						
Steel Diameter (mm)	TYPE	Masse linéique		Metric density (gr)	Moy - 0.25π	Reference Pack
		Length (cm)	Weight (gr)			
8 TMT	TMT	50.800	191.80	377.56	378.49 gr/ml	1
8 TMT	TMT	50.700	190.50	375.74		2
8 TMT	TMT	51.600	199.50	386.63		3
10 TMT	TMT	50.900	302.80	594.89	590.65 gr/ml	1
10 TMT	TMT	50.200	293.30	584.26		2
10 TMT	TMT	50.700	303.40	598.42		3
12 TMT	TMT	53.000	457.20	862.64	864.41 gr/ml	1
12 TMT	TMT	52.500	453.90	864.57		2
12 TMT	TMT	51.200	444.50	868.16		3
14 TMT	TMT	51.600	600.90	1164.53	1161.3 gr/ml	1
14 TMT	TMT	51.600	600.10	1162.98		2
14 TMT	TMT	49.200	570.10	1158.74		3
16 TMT	TMT	50.500	764.60	1514.06	1519.0 gr/ml	1
16 TMT	TMT	49.700	757.60	1524.35		2
16 TMT	TMT	50.800	773.60	1522.83		3
20 TMT	TMT	51.000	1230.80	2413.33	2407.2 gr/ml	1
20 TMT	TMT	49.700	1206.40	2427.36		2
20 TMT	TMT	50.200	1201.70	2393.82		3
25 TMT	TMT	51.300	1891.80	3687.72	3674.9 gr/ml	1
25 TMT	TMT	51.300	1875.00	3654.97		2
25 TMT	TMT	52.100	1927.70	3700.00		3



**Sheet of tensile tests of a standard steel
specimen**

Universal Testing Machine (UTM) LABOGENIE / Capacity 600 KN

Date of tests

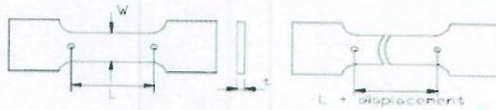
11-juin-26

NF EN 10002-1 [Part 1: Test at Room
Temperature]

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MESURE DE L'ELONGATION

Steel Diameter (mm)	Original length, 5f (cm)	Displacement (L+) after failure (cm)	Elongation (strain)		Reference Pack
			Elongation (strain)	Moy - 0.25σ	
8 TMT	4.0	4.70	17.5%	22.7%	1
8 TMT	4.0	5.10	27.5%		2
8 TMT	4.0	5.10	27.5%		3
10 TMT	5.0	5.80	16.0%	17.9%	1
10 TMT	5.0	5.90	18.0%		2
10 TMT	5.0	6.10	22.0%		3
12 TMT	6.0	7.40	23.3%	19.2%	1
12 TMT	6.0	7.00	16.7%		2
12 TMT	6.0	7.20	20.0%		3
14 TMT	7.0	8.40	20.0%	17.7%	1
14 TMT	7.0	8.20	17.1%		2
14 TMT	7.0	8.20	17.1%		3
16 TMT	8.0	9.60	20.0%	17.3%	1
16 TMT	8.0	9.50	18.8%		2
16 TMT	8.0	9.20	15.0%		3
20 TMT	10.0	12.20	22.0%	21.0%	1
20 TMT	10.0	12.00	20.0%		2
20 TMT	10.0	12.20	22.0%		3
25 TMT	13.0	15.30	17.7%	18.7%	1
25 TMT	13.0	15.50	19.2%		2
25 TMT	13.0	15.60	20.0%		3



Lab Operator
FOTOUO FAUSTIN





FICHE DE SUIVI DES ESSAIS

Universal Testing Machine (UTM) LABOGENIE / Capacity 600 KN

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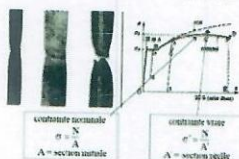
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Striction à la rupture

Steel Diameter (mm)	Initial diameter (mm)	Final diameter after failure (mm)	Area Reduction at failure	Moy - 0.25σ	Reference Pack
8 TMT	8.0	5.00	60.9%	61.7%	1
8 TMT	8.0	4.90	62.5%		2
8 TMT	8.0	4.90	62.5%		3
10 TMT	10.0	6.50	57.8%	58.4%	1
10 TMT	10.0	6.40	59.0%		2
10 TMT	10.0	6.40	59.0%		3
12 TMT	12.0	8.20	53.3%	54.1%	1
12 TMT	12.0	8.10	54.4%		2
12 TMT	12.0	8.00	55.6%		3
14 TMT	14.0	9.10	57.8%	54.6%	1
14 TMT	14.0	9.40	54.9%		2
14 TMT	14.0	9.60	53.0%		3
16 TMT	16.0	10.50	56.9%	56.2%	1
16 TMT	16.0	10.90	53.6%		2
16 TMT	16.0	10.00	60.9%		3
20 TMT	20.0	13.50	54.4%	52.9%	1
20 TMT	20.0	13.90	51.7%		2
20 TMT	20.0	13.60	53.8%		3
25 TMT	25.0	16.90	54.3%	55.3%	1
25 TMT	25.0	16.60	55.9%		2
25 TMT	25.0	16.50	56.4%		3

Striction



Lab Operator

FOTOLO PAUSTIN





FICHE DE SUIVI DES ESSAIS

Universal Testing Machine (UTM) LABOGENIE / Capacity 600 KN

Date of tests

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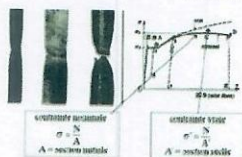
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10 TMT	10.0	6.40	59.0%		2
10 TMT	10.0	6.40	59.0%		3
12 TMT	12.0	8.20	53.3%	54.1%	1
12 TMT	12.0	8.10	54.4%		2
12 TMT	12.0	8.00	55.6%		3
14 TMT	14.0	9.10	57.8%	54.6%	1
14 TMT	14.0	9.40	54.9%		2
14 TMT	14.0	9.60	53.0%		3
16 TMT	16.0	10.50	56.9%	56.2%	1
16 TMT	16.0	10.90	53.6%		2
16 TMT	16.0	10.00	60.9%		3
20 TMT	20.0	13.50	54.4%	52.9%	1
20 TMT	20.0	13.90	51.7%		2
20 TMT	20.0	13.60	53.8%		3
25 TMT	25.0	16.90	54.3%	55.3%	1
25 TMT	25.0	16.60	55.9%		2
25 TMT	25.0	16.50	56.4%		3

Striction



Lab Operator
FOTOUO FAUSTIN

