Supplementary Material — Table S1. Taza marl-limestone dataset (Ettayeb et al., Geotechnics, geotechnics-4576809)

Table S1a. Specimen-level dataset used for the UCS–Vp and UCS–HR regressions (Taza marl-limestone core specimens, n = 28)

Specimen	Origin (core / block)	D (mm)	L (cm)	L/D (–)	w (%)	Vp (km/s)	HR (–)	F (kN)	UCS (MPa)	UCS fitted, Vp model (MPa)	UCS LOOCV, Vp model (MPa)	UCS fitted, HR model (MPa)	UCS LOOCV, HR model (MPa)
P1	n.d.	53	10.8	2.04	2.5	4.48	39.0	106.1	48.1	46.3	46.1	37.7	36.9
P2	n.d.	53	11.0	2.08	3.2	4.18	38.5	95.8	43.4	40.4	40.1	36.7	36.2
P3	n.d.	53	11.2	2.11	1.8	3.09	32.0	51	23.1	24.6	24.6	25.6	25.7
P4	n.d.	53	11.5	2.17	2.5	2.55	27.0	43	19.5	19.2	19.2	19.4	19.4
P5	n.d.	53	10.6	2.00	3.1	2.34	26.0	41.8	19.0	17.4	17.3	18.3	18.3
P6	n.d.	53	10.8	2.04	2.8	2.12	24.0	45.2	20.5	15.8	15.3	16.4	15.9
P7	n.d.	53	11.0	2.08	2.9	2.98	30.0	52.4	23.8	23.4	23.4	22.9	22.8
P8	n.d.	53	11.0	2.08	3.0	2.48	29.0	40.1	18.2	18.6	18.6	21.6	21.8
P9	n.d.	53	11.5	2.17	2.8	2.33	28.5	38.5	17.5	17.4	17.4	21.1	21.3
P10	n.d.	53	11.8	2.23	3.0	2.89	31.0	44.5	20.2	22.4	22.5	24.2	24.4
P11	n.d.	53	11.8	2.23	2.8	3.12	33.0	55.1	25.0	24.9	24.9	27.0	27.1
P12	n.d.	53	11.6	2.19	2.7	2.72	28.0	42.8	19.4	20.8	20.8	20.5	20.5
P13	n.d.	53	12.0	2.26	2.5	4.52	44.0	108	49.0	47.2	46.9	49.8	50.0
P14	n.d.	53	11.8	2.23	2.5	4.38	41.3	102.2	46.3	44.3	44.0	42.9	42.4
P15	n.d.	53	11.0	2.08	2.9	4.33	41.8	98.56	44.7	43.3	43.1	44.1	44.0
P16	n.d.	53	11.9	2.25	2.8	2.78	29.6	40.1	18.2	21.3	21.5	22.4	22.6
P17	n.d.	53	12.0	2.26	2.7	4.22	42.0	87	39.5	41.2	41.4	44.6	45.5
P18	n.d.	53	10.6	2.00	2.5	3.45	33.9	72	32.7	28.9	28.8	28.4	28.3
P19	n.d.	53	10.6	2.00	3.1	3.24	31.8	57	25.8	26.3	26.3	25.3	25.3
P20	n.d.	53	10.8	2.04	3.0	4.65	38.2	115	52.2	50.1	49.7	36.1	35.0
P21	n.d.	53	10.7	2.02	2.9	3.22	34.7	57	25.8	26.1	26.1	29.7	29.9
P22	n.d.	53	12.0	2.26	2.5	3.44	31.8	62	28.1	28.8	28.9	25.3	25.2
P23	n.d.	53	10.8	2.04	2.5	2.87	29.4	41	18.6	22.2	22.4	22.1	22.3
P24	n.d.	53	11.0	2.08	2.8	3.02	30.4	47	21.3	23.8	23.9	23.4	23.5
P25	n.d.	53	13.0	2.45	3.1	2.52	24.0	38	17.2	18.9	19.1	16.4	16.3
P26	n.d.	53	12.5	2.36	2.6	2.77	33.0	40	18.1	21.2	21.4	27.0	27.4
P27	n.d.	53	10.6	2.00	2.4	2.30	23.0	55.1	25.0	17.1	16.5	15.5	14.5
P28	n.d.	53	11.2	2.11	2.0	2.70	27.0	40.8	18.5	20.6	20.7	19.4	19.4

D: specimen diameter; L: specimen length; w: water content at test (laboratory); F: failure load; UCS = 10·F/(π·D²/4), with F in kN and D in cm (π taken as 3.14 in the laboratory sheets).

UCS: uniaxial compressive strength; Vp: ultrasonic P-wave velocity; HR: Schmidt rebound hardness (dimensionless index); PI: plasticity index; MBV: methylene blue value.

Fitted values: UCS = 5.9905·exp(0.4567·Vp) and UCS = 4.3176·exp(0.0556·HR), obtained by least squares on ln(UCS).

LOOCV values: prediction for each specimen from a model refitted on the remaining 27 specimens (leave-one-out cross-validation).

Identification tests (fines, PI, MBV) and GMTR classes are given in Table S1b; they were performed on separate crushed samples and cannot be paired with the core specimens.

Degradability (DG) and fragmentability (FR) were determined (Table S1c).

n.d.: not determined — the specimens were collected from four outcrops (Sites F1–F4) of the Taza corridor, but the outcrop and the origin (field core or laboratory-cored block) of each specimen were not recorded.

Table S1b. Identification tests on crushed samples (particle size, plasticity, methylene blue) and GMTR class

Sample	Fines < 0.08 mm (%)	Plasticity index PI (%)	MBV (g/100 g)	GMTR class (Fig 17)
P1	91	47	7.23	F4
P2	35	27	1.70	F1
P3	97	41	4.70	F3
P4	80	49	4.56	F4
P5	76	27	3.43	F3
P6	20	23	1.36	F1
P7	16	20	0.80	F1
P8	95	49	3.42	F4
P9	97	43	2.69	F3
P10	97	48	6.09	F4
P11	87	30	2.80	F3
P12	45	21	1.13	F1
P13	97	39	3.64	F3
P14	94	36	3.86	F3
P15	92	32	3.75	F3
P16	96	43	4.06	F3
P17	51	16	1.36	F1
P18	51	17	1.25	F1
P19	96	30	3.25	F3
P20	61	17	1.24	F1
P21	55	16	1.42	F1
P22	54	18	1.89	F1
P23	55	17	1.77	F1
P24	23	17	1.21	F1
P25	31	17	1.26	F1
P26	84	18	3.47	F2
P27	83	18	2.86	F2
P28	88	17	3.02	F2

These samples were taken from the same outcrops as the core specimens but not systematically from the same blocks; sample numbers do not correspond to the core specimens of Table S1a.

PI: plasticity index; MBV: methylene blue value; GMTR: Moroccan guide for road earthworks (material classification).

Table S1c. Degradability (DG) and fragmentability (FR) test results (n = 21)

Test no.	Degradability DG (–)	Fragmentability FR (–)	Specimen ID
1	6.1	3.8	n.d.
2	9.3	5.8	n.d.
3	13.5	4.7	n.d.
4	15.5	3.7	n.d.
5	13.8	4.0	n.d.
6	13.3	5.9	n.d.
7	10.9	4.7	n.d.
8	12.7	5.2	n.d.
9	8.7	4.4	n.d.
10	11.8	3.4	n.d.

Test no.	Degradability DG (–)	Fragmentability FR (–)	Specimen ID
11	7.7	3.1	n.d.
12	12.2	3.6	n.d.
13	6.8	3.1	n.d.
14	10.5	4.2	n.d.
15	13.5	5.8	n.d.
16	14.5	5.9	n.d.
17	10.2	3.4	n.d.
18	11.8	4.2	n.d.
19	6.8	3.9	n.d.
20	8.8	3.2	n.d.
21	9.2	4.4	n.d.

n.d.: the correspondence between the 21 degradability/fragmentability tests and specimens P1–P28 was not recorded.
DG and FR determined according to the Moroccan standards NM 13.1.038 and NM 13.1.037, respectively.