Dataset Summary: Tensile Strength Dataset

Description

This dataset contains concrete mix compositions and their resulting mechanical strengths, including compressive and split tensile strength after 28 days of curing. It may be used to predict mechanical properties of concrete with recycled materials and additives.

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Ref	# of Tests	Nominal coarse aggregate size (mm)	RCA (%)	Rubber (%)	Fiber (%)	Fiber type	W/C	Plasticizer	Fly ash %	Compressive strength (MPa)	Tensile strength (MPa)
[1]	12	25	0-100	0	0	none	0.4	no	0	30-37.2	2.55-3.48
[2]	15	20	0	0-20	0	none	0.5	yes	0	35-56.1	2.7-4.4
[3]	24	25	0-100	0	0	none	0.5	yes	0	22.56-24.66	2.27-2.41
[4]	7	19	0-30	0-10	0-0.5	none, polypropylene	0.44	no	0	25.93-36.71	2.24-2.59
[5]	10	16	0	0	0-0.95	none, steel, other	0.4	yes	25	68-80.8	4.34-6.77
[6]	3	20	0-50	0	0	none	0.4	yes	26	42.6-50.03	2.32-3.12
[7]	5	20	0	0-40	0	none	0.5625	yes	0	15-26	2.5-3.5
[8]	15	19	0-30	0-10	0-2	none, polypropylene	0.38	no	0	30-40	2.5-3.7
[9]	4	20	0	0-20	0	none	0.48	no	0	29.64-37.15	2.8-3.36
[10]	12	25	0-55	0	0-1.5	none, polypropylene	0.531447	yes	0	32.3-53.5	3.02-5.6
[11]	6	20	5-30	0	0	none	0.45	no	0	52.31-58.98	3.57-3.81
[12]	8	-	0-100	0	0	none	0.3-0.64	no, yes	0	38.1-62.8	3.11-4.38
[13]	6	20	0-100	0	0	none	0.44-0.52	no, yes	0	34.5-39	3.3-3.8
[14]	10	20	0-100	0	0-2	none, steel	0.31-0.54	yes	0	28.8-44.2	2.77-7.61
[15]	24	20	0-100	0	0	none	0.45-0.55	yes	0-35	25.2-66.8	2.19-3.43
[16]	21	19-25	0-100	0	0-1	none, steel	0.3-0.55	yes	0	29-97.8	2.49-8.42

Ref	# of Tests	Nominal coarse aggregate size (mm)	RCA (%)	Rubber (%)	Fiber (%)	Fiber type	W/C	Plasticizer	Fly ash %	Compressive strength (MPa)	Tensile strength (MPa)
[17]	7	25	0-100	0	0	none	0.5-0.55	yes	0	28-39.42	2.7-3.36
[18]	18	20	0-20	0	0-1.5	none, other	0.66	no	0	21.3-23.9	2.34-3.48
[19]	6	22.4	0-100	0	0	none	0.37-0.4	yes	11.11	66.22-82.86	3.5-5.3
[20]	7	25	0	0-10	0	none	0.6	yes	0	20.12-33.18	1.52-2.99
[21]	10	31.5	0-100	0	0	none	0.43	no	0	28.03-45.45	2.13-2.68
[22]	9	37	0-100	0	0-2	none, steel	0.4125	yes	0	35-37.4	3.78-6.12
[23]	7	**	0	0	0-2	none, polypropylene, steel	0.45	no, yes	0	43.8-54.8	3.3-4.3
[24]	12	10	0	0-35	0-1	none, steel	0.4	yes	0	29.73-65.61	2.51-4.73
[25]	3	31.5	0-100	0	0	none	0.58-0.596	no	0	24.5-28	3-3.2
[26]	4	25	0-100	0	0	none	0.5	no	0	23.7-28.7	2.2-3.2
[27]	4	22.4	0-100	0	0	none	0.52	no	0	42.7-50	3.61-3.96
[28]	7	**	0	0	0-3	none, steel	0.44-0.49	no	0	42.3-48.6	3.4-6.5
[29]	3	25.4	0	0	0-0.03	none, polypropylene, other	0.65	no	0	23.02-25.88	2.17-2.54
[30]	5	**	0	0	0-2	none, polypropylene	0.5	no	0	33.7-45.25	2.52-3.52
[31]	16	19	0	0	0-0.5	none, polypropylene	0.36-0.46	yes	0-8	41.3-66.33	3.22-5.43
[32]	36	20	0	0	0.15-0.3	polypropylene	0.35-0.5	no	30-50	22.23-77.63	2.14-16.02
[33]	10	15	0	0	0-3.43	none, polypropylene	0.4	yes	34.29	36.41-62.93	2.90-5.78

**Data Missing

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