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Supplementary Materials to the Manuscript Entitled

New metakaolin-based geopolymers with the addition of different types of waste stone powder

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Table S1. Particle-size analyses of the different types of waste stone powder

	below 1 µm	below 5 µm	below 10 µm	below 36 µm	below 63 µm	below 90 µm	Below 180 µm	below 280 µm	below 400 µm	D10	D50	D90
	(wt. %)									(µm)		
Dolomite	8.06	26.54	37.83	69.13	81.47	87.88	94.41	97.13	100.00	1.27	17.49	105.26
Marble	12.60	48.86	68.18	95.23	99.29	100.00	100.00	100.00	100.00	0.86	5.22	24.45
Marlstone	4.50	19.31	27.31	53.86	73.03	84.26	94.71	97.84	100.00	2.09	31.92	118.63
Limestone	5.96	23.01	33.45	68.03	86.88	95.23	100.00	100.00	100.00	1.70	21.29	71.98
Feldspar	2.81	18.91	32.21	73.13	89.84	96.27	100.00	100.00	100.00	2.53	19.30	63.56

Table S2. Mix design summary

Geopolymer designation	sample	L05	Alkaline solution	Quartz sand	Dolomite	Marble	Marlstone	Limestone	Feldspar
		(g)							
STJ 25		50	50	61	-	-	-	-	-
Dolomite-A		50	50	61	8	-	-	-	-
Dolomite-B		50	50	61	16	-	-	-	-
Marble-A		50	50	61	-	8	-	-	-
Marble-B		50	50	61	-	16	-	-	-
Marlstone-A		50	50	61	-	-	8	-	-
Marlstone-B		50	50	61	-	-	16	-	-
Limestone-A		50	50	61	-	-	-	8	-
Limestone-B		50	50	61	-	-	-	16	
Feldspar-A		50	50	61	-	-	-	-	8
Feldspar-B		50	50	61	-	-	-	-	16

Table S3. XRD analyses of the stone powder used

	Major	**Minor**	**Traces**
L05	Quartz (SiO_2) Amorphous phase	Anatase (TiO_2)	Muscovite ($KAl_2(Si_3Al)O_{10}(OH)_2$) Goethite ($FeO(OH)$)
Dolomite	Dolomite ($CaMg(CO_3)_2$)	Calcite magnesian ($Mg_{0.064}Ca_{0.936}CO_3$)	Quartz (SiO_2) Biotite ($KFeMg_2(AlSi_3O_{10})(OH)_2$)
Marble	Calcite magnesian ($Mg_{0.064}Ca_{0.936}CO_3$)	Dolomite ($CaMg(CO_3)_2$)	Quartz (SiO_2)
Marlstone	Magnesium calcite ($Mg_{0.03}Ca_{0.97}CO_3$) Quartz (SiO_2)	Muscovite ($KAl_2(Si_3Al)O_{10}(OH)_2$) Microcline ($K_{0.904}Na_{0.085}Ca_{0.005}Ba_{0.006}Al_{0.95}Si_{3.05}O_8$)	Kaolinite ($Al_2Si_2O_5(OH)_4$) Cristobalite (SiO_2)
Limestone	Magnesium calcite ($Mg_{0.03}Ca_{0.97}CO_3$)		Quartz (SiO_2)
Feldspar	Microcline ($K_{0.94}Na_{0.06}Al_{0.95}Si_{3.05}O_8$) Albite ($Na(AlSi_3O_8)$) Quartz ($SiO_2$)	Muscovite ($KAl_2(Si_3Al)O_{10}(OH)_2$)	Kaolinite ($Al_2Si_2O_5(OH)_4$)

Table S4. XRD analyses of geopolymers with different types of waste stone powder

	Major	**Minor**	**Traces**
STJ 25	Quartz (SiO_2) Amorphous phase	-	Anatase (TiO_2)
Dolomite-B	Quartz (SiO_2) Amorphous phase	Dolomite ($CaMg(CO_3)_2$)	Anatase (TiO_2) Calcite magnesian ($Mg_{0.064}Ca_{0.936}CO_3$)
Marble-B	Quartz (SiO_2) Amorphous phase	Calcite magnesian ($Mg_{0.064}Ca_{0.936}CO_3$)	Anatase (TiO_2) Dolomite ($CaMg(CO_3)_2$)
Marlstone-B	Quartz (SiO_2) Amorphous phase	Magnesium calcite ($Mg_{0.03}Ca_{0.97}CO_3$)	Anatase (TiO_2)
Limestone-B	Quartz (SiO_2) Amorphous phase	Magnesium calcite ($Mg_{0.03}Ca_{0.97}CO_3$)	Anatase (TiO_2)
Feldspar-B	Quartz (SiO_2) Amorphous phase	Microcline ($K_{0.94}Na_{0.06}Al_{0.95}Si_{3.05}O_8$) Albite ($Na(AlSi_3O_8)$	Anatase (TiO_2) Muscovite ($KAl_2(Si_3Al)O_{10}(OH)_2$)

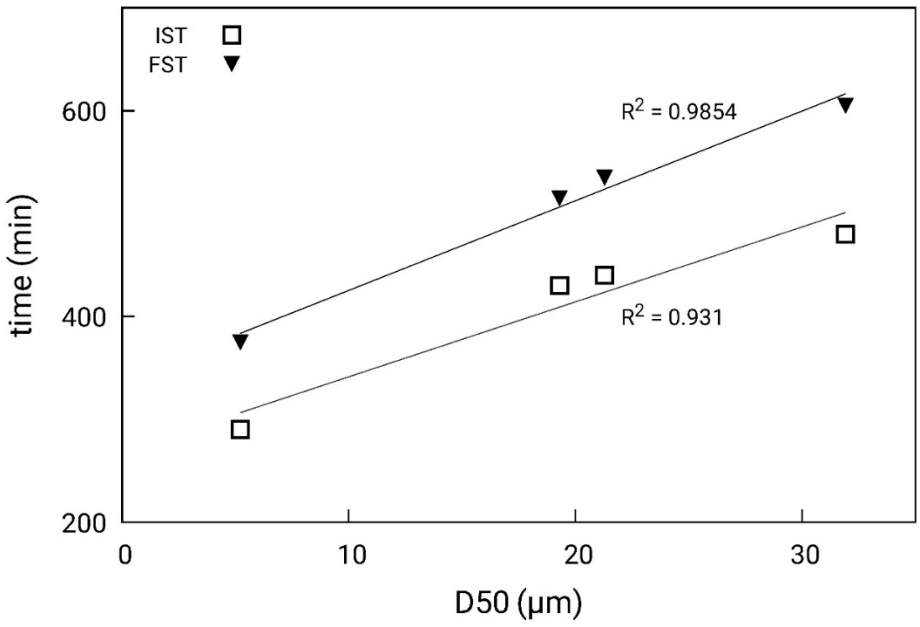

Figure S1. The dependence of solidification time on WSP particle sizes

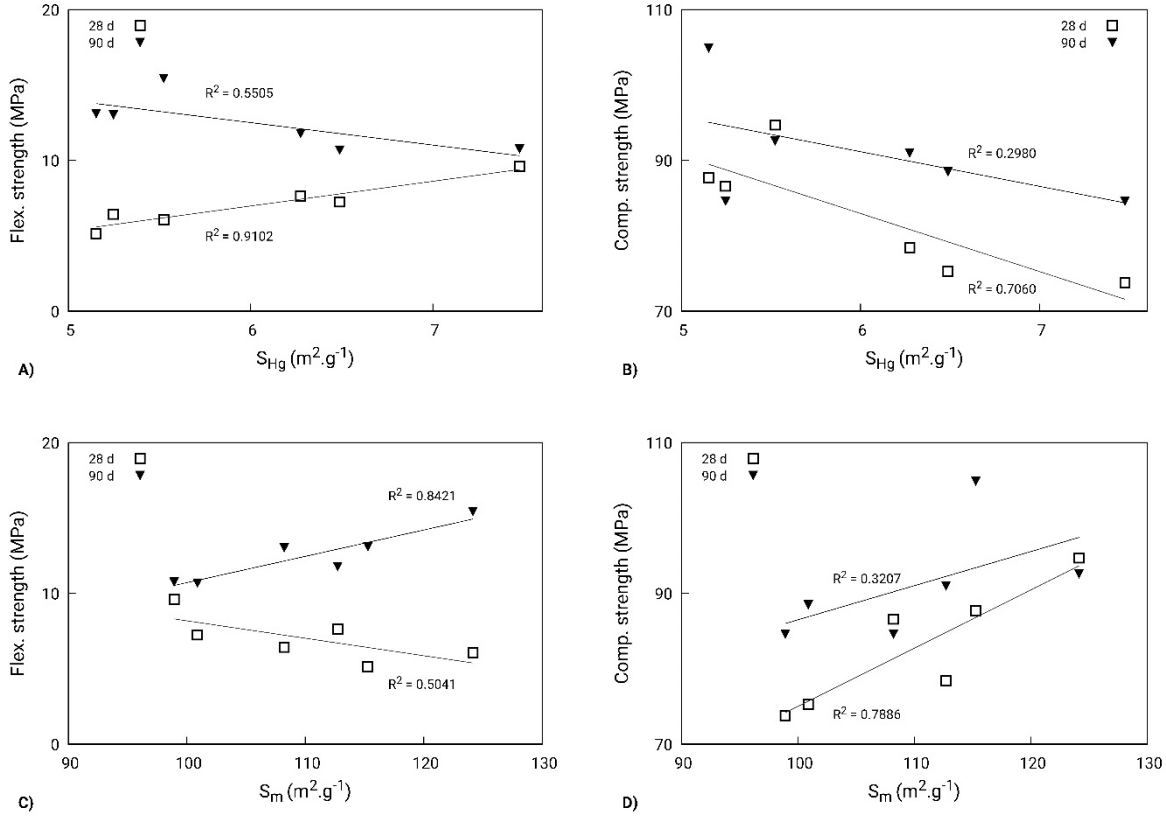

Figure S2. The dependence of strength factors on pore content: A) flexural strength on meso- and macropore content, B) compressive strength on meso- and macropore content, C) flexural strength on micropore content, D) compressive strength on micropore content