Table 1. Ranges of variability of the values of strength, elastic and deformation parameters

Parameters	Semi-gloss coal	Matt coal	Fine-grained sandstones	Medium-grained sanstone	Claystones
Residual stress MPa	0.01-4.06	0.59-1.19	4.06-21.59	5.44	6.40-8.85
Young's modulus MPa	1 305-2 411	2 144-2 703	3 215-7 882	2 937	2 814-3 862
Post-critical modulus MPa	697-24 434	8 687-14 491	1 050-15 900	3081	1 074-3 537
Poisson's ratio	0.17-0.38	0.26-0.30	0.12-0.22	0.14	0.11-0.13
Critical strain ‰	15,07-20,59	18.00-19,77	14.43-26.10	18.19	13.24-23.65
Maximal strain ‰	19.00-30,95	20.31-23.36	16.81-53.07	35.89	26.11-43.06
Tensile strength MPa	0.37-0,76	0.36-0.54	2.15-4.94	2.53	0.35-1.34

Table 2. Variability ranges for strength parameters - differential stress, cohesion and angle of internal friction

Rock	Conventional triaxial compressive stress					Uniaxial compressive stress		Shearing cubic samples in the holder	
	critical differential stress $(\sigma_1-\sigma_3)$ MPa			c MPa	φ 1°	c MPa	φ 1°	c MPa	φ 1°
	σ_3 = 5 MPa	σ_3 = 15 MPa	σ_3 = 30 MPa						
semi-gloss coal	55.2	60.5-71.3	74.0-89.8	3.02-4.53	51-58	2.03-3.70	51-62	-	-
matt coal	72.5	60.8-93.5	111.6	3.00-4.13	49-59	3.04-3.82	65-68	-	-
sandstones	92.9-176.0	123.7-243.6	176.0-297	6.7-18.7	52-64	6.0-13.6	41-51	8.2	41
claystones	-	104.1	-	5.1	60	2.94-4.90	51-68	3.4-3.08	64-71

Table 3. Ranges of variability of the values of strength, elastic and deformation parameters

Parameters	Semi-gloss coal	Matt coal	Fine-grained sandstone	Medium-grained sandstone	Claystone
Bulk density kg/m^3	1 301 - 1 418	1323 - 1 422	2346 - 2711	2550	2493 - 2576
Density kg/m^3	1405 - 1538	1486 -1521	2626 - 2767	2637	2635 - 2744
Total porosity %	5.68 – 12.93	6.55 – 10.96	1.75 – 12.11	3.33	5.36 – 6.12

The values of geomechanical parameters are within the ranges of these values known from scientific studies of other researchers who study the geomechanical properties of Carboniferous rocks in the Upper Silesian Coal Basin in Poland.