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Dedicated to my mother

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List of Abbreviations

<i>AWTT</i>	Auto – warning Tell-tale
<i>CIL</i>	Coal India Limited
<i>CM</i>	Continuous Miner
<i>CMR</i>	Coal Mine Regulations
<i>CMRI</i>	Central Mining Research Institute
<i>DHTT</i>	Dual Height Tell–tale
<i>FISH</i>	FLAC – ISH (language of FLAC)
<i>FLAC^{3D}</i>	Fast Lagrangian Analysis of Continua in three dimension
<i>FOS</i>	Factor of Safety
<i>GSI</i>	Geological Strength Index
<i>LTD</i>	Load Transfer Distance
<i>MOC</i>	Ministry of coal
<i>RBE</i>	Roof Bolt Extensometer
<i>RMR</i>	Rock Mass Rating
<i>RQD</i>	Rock Quality Designation
<i>RTT</i>	Rotary Tell–tale
<i>SCCL</i>	Singareni Collieries Company Limited
<i>SECL</i>	South Eastern Coalfields Limited
<i>SF</i>	Strength Factor
<i>SR</i>	Stress Ratio
<i>UCS</i>	Uniaxial Compressive Strength
<i>US</i>	United States

List of Symbols

I	Cavability Index
σ	Uniaxial Compressive Strength
l	Average length of core
t	Thickness of strong bed
S_p	Strength of pillar
w	Width of pillar
h	Height of pillar
S_{cube}	Strength of cubical pillar
D	Depth of cover
\circ	Degree
c	Cohesion
ϕ	Friction angle
D_{max}	Maximum depth of cover
SR_W	Stress ratio of working pillar
SR_B	Stress ratio of barrier pillar
$FOS_{Development}$	Factor of safety of pillar during development
L	Load-bearing capacity of remnant
A	Area of remnant
L_P	Load-bearing capacity of previously extracted pillar
L_W	Load-bearing capacity of working pillar
SF_W	Strength Factor of working pillar/remnant
SF_P	Strength Factor of previously extracted pillar/remnant

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