

## World Stress Map quality ranking scheme 2008 for the orientation of maximum horizontal compressional stress $S_{Hmax}$

Stress indicator		A	B	C	D	E
		$S_H$ believed to be within $\pm 15^\circ$	$S_H$ believed to be within $\pm 15-20^\circ$	$S_H$ believed to be within $\pm 20-25^\circ$	Questionable $S_H$ orientation ( $\pm 25-40^\circ$ )	no reliable information ( $> \pm 40^\circ$ )
Focal Mechanism (FM)	Formal Inversion (FMF)	<ul style="list-style-type: none"> <li>Formal inversion of <math>\geq 15</math> well constrained single event solutions in close geographic proximity and s.d. or misfit angle <math>\leq 12^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li>Formal inversion of <math>\geq 8</math> well constrained single event solutions in close geographic proximity and s.d. or misfit angle <math>\leq 20^\circ</math></li> </ul>	-	-	-
	Single (FMS)	-	-	<ul style="list-style-type: none"> <li>Well constrained single event solution, <math>M \geq 2.5</math> (e.g. CMT solutions)</li> </ul>	<ul style="list-style-type: none"> <li>Well constrained single event solution, <math>M &lt; 2.5</math></li> </ul>	<ul style="list-style-type: none"> <li>Mechanism with P,B,T axes all plunging <math>25^\circ-40^\circ</math></li> <li>Mechanism with P and T axes both plunging <math>40^\circ-50^\circ</math></li> </ul>
	Average (FMA)	-	-	-	<ul style="list-style-type: none"> <li>Average of P-axis trends or circular statistics of P-axis trends</li> <li>Composite solutions</li> </ul>	-
Borehole Breakout (BO)	from caliper logs	<ul style="list-style-type: none"> <li><math>\geq 10</math> distinct breakout and combined length <math>\geq 300</math> m in a single well with s.d. <math>\leq 12^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 6</math> distinct breakout and combined length <math>\geq 100</math> m in a single well with s.d. <math>\leq 20^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 4</math> distinct breakouts and combined length <math>\geq 30</math> m with s.d. <math>\leq 25^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>&lt; 4</math> distinct breakouts or <math>&lt; 30</math> m combined length in a single well with s.d. <math>\leq 40^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li>Wells without reliable breakouts or s.d. <math>&gt; 40^\circ</math></li> </ul>
	from image logs	<ul style="list-style-type: none"> <li><math>\geq 10</math> distinct breakout zones and combined length <math>\geq 100</math> m in a single well with s.d. <math>\leq 12^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 6</math> distinct breakout zones and combined length <math>\geq 40</math> m in a single well with s.d. <math>\leq 20^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 4</math> distinct breakouts and combined length <math>\geq 20</math> m with s.d. <math>\leq 25^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>&lt; 4</math> distinct breakouts or <math>&lt; 20</math> m combined length in a single well with s.d. <math>\leq 40^\circ</math></li> </ul>	
Drilling Induced Fractures (DIF)		<ul style="list-style-type: none"> <li><math>\geq 10</math> distinct fracture zones in a single well with a combined length <math>\geq 100</math> m and s.d. <math>\leq 12^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 6</math> distinct fracture zones in a single well with a combined length <math>\geq 40</math> m and s.d. <math>\leq 20^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 4</math> distinct fracture zones in a single well with a combined length <math>\geq 20</math> m and s.d. <math>\leq 25^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>&lt; 4</math> distinct fracture zones in a single well or a combined length <math>&lt; 20</math> m and s.d. <math>\leq 40^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li>Wells without fracture zones or s.d. <math>&gt; 40^\circ</math></li> </ul>
Hydraulic Fracture (HF)		<ul style="list-style-type: none"> <li><math>\geq 5</math> hydrofrac orientations in a single well with s.d. <math>\leq 12^\circ</math></li> <li>depth <math>\geq 300</math> m, and distributed over a depth range <math>\geq 300</math> m</li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 4</math> hydrofrac orientations in a single well with s.d. <math>\leq 20^\circ</math></li> <li>depth <math>\geq 100</math> m, and distributed over a depth range <math>\geq 200</math> m</li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 3</math> hydrofrac orientations in a single well with s.d. <math>\leq 25^\circ</math></li> <li>depth <math>\geq 30</math> m, and distributed over a depth range <math>\geq 100</math> m</li> </ul>	<ul style="list-style-type: none"> <li>Single hydrofrac orientation</li> </ul>	<ul style="list-style-type: none"> <li>Wells in which only stress magnitudes are measured, without information on orientations</li> </ul>
Overcoring (OC) and Borehole Slotter (BS)		<ul style="list-style-type: none"> <li><math>\geq 11</math> measurements with depth <math>\geq 300</math> m and s.d. <math>\leq 12^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 8</math> measurements with depth <math>\geq 100</math> m and s.d. <math>\leq 20^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 5</math> measurements with depth <math>\geq 30</math> m and s.d. <math>\leq 25^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 2</math> measurements with depth <math>\geq 10</math> m and s.d. <math>\leq 40^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>&lt; 2</math> measurements or depth <math>&lt; 10</math> m or s.d. <math>&gt; 40^\circ</math></li> <li>Measurements in boreholes extending less than two excavation radii from the excavation wall</li> <li>Distance to topographic features less than three times the height of the topographic feature</li> </ul>
Fault Slip (GF)		<ul style="list-style-type: none"> <li>Inversion of <math>\geq 25</math> fault-slip data with a fluctuation <math>\leq 9^\circ</math> for <math>\geq 60\%</math> of the whole dataset</li> </ul>	<ul style="list-style-type: none"> <li>Inversion of <math>\geq 15</math> fault-slip data with a fluctuation <math>\leq 12^\circ</math> for <math>\geq 45\%</math> of the whole dataset</li> </ul>	<ul style="list-style-type: none"> <li>Inversion of <math>\geq 10</math> fault-slip data with a fluctuation <math>\leq 15^\circ</math> for <math>\geq 30\%</math> of the whole dataset</li> <li>Attitude of fault and primary sense of slip known, no actual slip vector</li> </ul>	<ul style="list-style-type: none"> <li>Inversion of <math>\geq 6</math> fault-slip data with a fluctuation <math>\leq 18^\circ</math> for <math>\geq 15\%</math> of the whole dataset</li> <li>Offset core holes</li> <li>Quarry popups</li> <li>Postglacial surface fault offsets</li> </ul>	-
Volcanic Vent Alignment (GVA)		<ul style="list-style-type: none"> <li><math>\geq 5</math> Quaternary vent alignments or "parallel" dikes with s.d. <math>\leq 12^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li><math>\geq 3</math> Quaternary vent alignments or "parallel" dikes with s.d. <math>\leq 20^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li>Single well-exposed Quaternary dike</li> <li>Single alignment with <math>\geq 5</math> vents</li> </ul>	<ul style="list-style-type: none"> <li>Volcanic alignment inferred from <math>&lt; 5</math> vents</li> </ul>	-
Petal Centerline Fractures (PC)		-	-	<ul style="list-style-type: none"> <li>Mean orientation of fractures in a single well with s.d. <math>\leq 20^\circ</math></li> </ul>	-	-

s.d. = standard deviation