**APPENDIX 3**

Lade-Duncan criterion:

|  | (A.3.1) |
| --- | --- |

where *I*'1 and *I*'3 are stress invariants:

|  | (A.3.2) |
| --- | --- |

*S*0 is rock cohesion and *η* is a function of friction:

|  | (A.3.3) |
| --- | --- |
|  | (A.3.4) |