

Road layer works material

Aggregate - product brochure



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Product overview

Base and subbase materials are those materials that provide the supporting structure in any pavement design.

Material specifications

Aggregate for crushed - stone base or subbase shall be derived from hard, sound and durable rock.

AfriSam aggregates comply to specifications as listed in the following tables.*

Material overview table.

| Use | Material | Nominal maximum size, mm | Additional fines allowed |
|---|----------|---|--------------------------|
| Base and subbase | G1 | 37,5 | Only from parent rock |
| | G2 | | Up to 10% natural fines* |
| | G3 | 37,5 or 26,5 | Up to 15% natural fines* |
| Pavement layers | G4 | Crushed: 37,5 and 26,5 | Natural materials |
| | | Uncrushed: 53 | |
| | G5 | Crushed: 53 | |
| | | Uncrushed: 63 | |
| | G6 | Crushed: 53 | |
| | | Uncrushed: 2/3 of compacted layer thickness | |
| | G7 | Crushed: 75 | |
| Uncrushed: 2/3 of compacted layer thickness | | | |

from COLTO tables 3602/1 and 3402/1

Grading requirements for approved target grading, tolerances and coarse sand ratio

For base and subbase, the mean grading (a minimum of six results) of the trial section (prior to compaction) meeting the grading limits and the requirements for approved target grading is determined. A smooth grading



curve is then classified as the approved target grading for a specific project. All future gradings are evaluated against the target grading in accordance with specified tolerances.

| Aggregate for G1 to G3 materials | | |
|---|--------------------|---------|
| Property | COLTO requirements | |
| Grading limits, % (m/m) passing sieve sizes, mm | 37,5 mm | 26,5 mm |
| | G1 - G3 | G3 |
| 53,0 | | |
| 37,5 | 100 | |
| 26,5 | 84 - 94 | 100 |
| 19,0 | 71 - 84 | 85 - 95 |
| 13,2 | 59 - 75 | 71 - 84 |
| 4,75 | 36 - 53 | 42 - 60 |
| 2,00 | 23 - 40 | 27 - 45 |
| 0,425 | 11 - 24 | 13 - 27 |
| 0,075 | 4 - 12 | 5 - 12 |

from COLTO table 3602/1

The aggregates used for crushed stone base shall comply with the requirements reflected on the crushing value tables below.

| 10% Fines aggregate crushing values | | | | |
|-------------------------------------|----------------------------------|---------|---------|--------------------------|
| Rock type | Matrix | Dry min | Wet min | Wet/dry relationship min |
| Arenaceous rocks | Non-siliceous cementing material | 140 kN | | 75% |
| | Siliceous cementing material | 110 kN | | 75% |
| Diamictites (tillite) | | 200 kN | | 70% |
| Argillaceous rocks | | 180 kN | 125 kN | |
| Other rock types | | 110 kN | | 75% |

from COLTO table 3602/2

| Aggregate crushing value | |
|--|----------|
| Rock type | ACV, max |
| Arenaceous rocks: without siliceous cementing matrix | 27% |
| Arenaceous rocks: with siliceous cementing matrix | 29% |
| Diamictites (tillite) | 21% |
| Argillaceous rocks | 24% |
| Other rock types | 29% |

from COLTO table 3602/3

Note: To ascertain where the various types of AfriSam aggregate would fall within the above table, please contact the technical services department.

Aggregate flakiness index

| Property | COLTO requirements |
|---|--|
| Flakiness index, % maximum (-26,5 + 19,0) and (-19 + 13,2) mm fractions | 35 (All faces fractured for G1; at least one fractured face on half of stone particles for G2 and G3) |

from COLTO table 3602/1

Grading requirements on approved target for G4 material

| Aggregate for G4 materials | | | |
|---|--------------------------------|------------------------------|---------------------|
| | % Passing through sieve by map | | |
| | Crushed materials | | Uncrushed materials |
| Grading limits, % (m/m) passing sieve sizes, mm | Nominal maximum size 37,5 mm | Nominal maximum size 26,5 mm | 53,0 mm |
| 53,0 | | | 100 |
| 37,5 | 100 | | 85 - 100 |
| 26,5 | 84 - 94 | 100 | |
| 19,0 | 71 - 84 | 85 - 95 | 60 - 90 |
| 13,2 | 59 - 75 | 71 - 84 | |
| 4,75 | 36 - 53 | 42 - 60 | 30 - 65 |
| 2,00 | 23 - 40 | 27 - 45 | 20 - 50 |
| 0,425 | 11 - 24 | 13 - 27 | 10 - 30 |
| 0,075 | 4 - 12 | 5 - 12 | 5 - 15 |

from COLTO table 3402/1

Aggregate for G5 - G7

Gradings on these materials are mainly determined by a grading modulus as prescribed by COLTO.

Atterberg limits G1 - G7

- Atterberg limits are in accordance with the SABS/THM1 test methods.
- Test results are conducted using - 0.425 mm fraction.
- The arithmetic mean of the PI's for a lot (a minimum of six tests) shall be used to determine the result.

Note: All SABS specifications will be replaced by SANS specifications, but the data contained therein will remain constant.

Note: All typical gradings and water demands may be obtained, on request, from the product technical department.

***Note: As members of ASPASA (Aggregate & Sand Producers Association of South Africa) we comply with COLTO specifications except where amended by ASPASA.**



Aggregate Quarry Locations

| | |
|-----------------|----------------------|
| Gauteng | KwaZulu-Natal |
| Eikenhof | Coedmore |
| Ferro | Ladysmith |
| Jukskei | Newcastle |
| Olifantsfontein | Pietermaritzburg |
| Roodekrans | Umlaas |
| Rooikraal | Verulam |
| Vogels | |
| Zeekoewater | Western Cape |
| | Peninsula |
| | Philippi (Depot) |
| | Rheebok |

Contact the regional office in your area for Sales or Technical Services or any other information.

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