

Item No. 8 : Providing and laying quarry spaul of approved quality including spreading, watering, consolidation with vibratory roller as per MORTH specification including loading and unloading etc. complete.

1. The quarry spauls shall be approved quarry as approved by the Ex. Engineer prior to collection. Filling of boxes, shall not be allowed till the metal is broken to the specified site.
2. The quarry spaul shall be as uniform in size as possible. The quarry spaul shall be hard, tough, solid durable of black trap quarry of close texture, free from decay and weathering. The stone shall be angular and roughly cubical in shape and round elongated or flaky materials shall be rejected. No sound or long rubble or angular chips smaller than specified size shall be allowed.

Grading for quarry spauls

IS:Sieve	Grading - I	Grading - II	Grading - III
75mm	100	-	-
53mm	-	100	-
26.5mm	55-75	50-80	100
9.50 mm	-	-	-
4.75mm	10-30	15-35	25-45
2.36mm	-	-	-
0.425mm	-	-	-
0.075mm	< 10	< 10	< 10

Material passing through 425 micro sieve for all the three gradings when tested according to I.S. 2720 (Part-5) shall have liquid limit and plastic index not more than 25 and 6 respectively.

3. All unsound, weathered or disintegrated stone obtained from the under surface layer of the quarry or other layers of boulders shall be rejected.
4. Wherever any doubt as to whether above requirement are satisfied in whole or part of the collection it shall be got screened by the Contractor if so ordered by the Executive Engineer, and for which no extra payment shall be claimed by the contractor
5. Any collection which does not fully satisfy the above requirements is liable to be rejected all together.
6. Regular stacks shall be made by the contractor on a fairly level ground. All the stack shall be marked by white wash immediately on being measured and recorded by the Engineer-in-charge.
7. The rate includes blasting the rock, if any, breaking the quarry spauls, stacking measuring in pharas etc. complete.
8. Stacks shall as per actual requirements and any materials in excess shall have to be transported by the contractor at the places directed by the Executive Engineer at the risk and cost of the contractor.
9. While stacking materials the depositing should commence at one end of the K.M. and carried continuously towards the other end unless the Executive Engineer shall direct otherwise and as a rule measurements shall be taken after metal for halt kilometer or Km. has been fully collected. Any fraction of these distance shall not be measured up.

10. The measurements shall be recorded in on Cum. basis on level computing method after rolling and consolidation and shall be paid accordingly.
- **Spreading quarry spauls in grade & camber complete.**
1. The quarry spauls shall be only be allowed to be spread after the written permission of the Executive Engineer is obtained.
2. The permission for spreading the metal shall be given by the Executive Engineer if
 - (i) The full quantity of a particular mile(kilometer)is completely collected.
 - (ii) The collection of metal-is also completed in the adjoining two miles (Kilometers)
 - (iii) The measurements are recorded in the Measurement book.
3. Q. S. shall if required, be screened, if containing rubbish dust, grass etc. it shall than be filled in basket & conveyed where required and spread evenly on the prepared surface be given twisting motion to the basket at the time of spreading. The surface shall then (15 m) by means of templates and strings as well as with camber boards and spirit level.
4. Between the straight length and curves and at the meeting points of the convex and concave portions of the reverse curves, the change in camber of the road, due to super elevations shall be made as well as with camber boards and spirit level.
5. At the time of spreading Q. S. a small quantity (about 4 to 5 percent) of metal as directed, shall be retained at the first instance. It shall be spread later 0:1 after partial consolidated as required to rectify the camber and to fill up the hollows if any. No extra amount shall be paid for this.
6. Measurements shall be paid as per the measurements of collection less the quantity remained to be spread and on cubic metre basis.
7. The rate includes the cost of screening the Q.S. if any spreading, sectioning, with template and adding reserved quota of metal, while/oiling is in progress for making good hollows and camber.
8. The surface shall be brought to the required camber which shall be checked at every 50 ft.(15 M) by means off templates of while the necessary of the in between shall tested by strings and corrected as required.
9. The centre line shall first be marked in the subgrade which is properly consolidated and has uniform camber and grade as required
10. The Q. S. shall be laid for a small length on 25 ft. (8 M.) and then the edge stones shall be laid.
11. Pegs shall be driven on either side of the road and joined with strings true and parallel with a distance between they equal to the width be laid with over metal Similarly.
12. The Q. S. shall be laid as close as possible so as too leave minimum possible interstices and voids.
13. Before roiling is allowed on soling the side berms shall be filled upto the top of the soling and at least 3'-0" (1 m.) on either side so as to prevent metal layer getting disturbed at times during rolling. The rate is inclusive of all the operations as stated above.
14. Immediately following the spreading of the coarse aggregates rolling shall be started with

three wheeled power roller of 8 - to - 10 tone capacity or tendum roller or equivalent vibratory roller. The weight of the roller shall depend upon the type of the aggregate and be indicated by Engineer-in-charge.

15. Except on super elevated portions where the roiling shall proceed from inner edge to outer, rolling shall from the edges gradually progressing towards the centre. First the edge / edges shall be compacted with roller running forward and backward. The roller shall then move inward parallel to centre line of the road, in successive passes uniformly lapping preceding tracks by at least one half the width.
16. Rolling shall continue until the aggregate is thoroughly keyed and the creeping of the aggregate a head of the roller is no longer visible. During rolling, slight sprinkling of water may be done, if necessary. Rolling shall no be done when the sub grade is soft or yielding or when it causes a wave like motion in the sub grade or sub base course.
17. The rolled surface shall be checked transversely and longitudinally with templates and any irregularities corrected by loosening the surface, adding or removing necessary amounts of aggregate and re - rolling until the entire surface conform to desired camber and grade. In no case shall the base of screening be permitted to make up depression.
18. The blinding material where it is required to be used shall be applied successively in two or more thin layer at a slow and uniform rate. After each application, the surface shall be copiously sprinkled with water, the resulting, slurry swept in with hand brooms or mechanical brooms to fill the voids properly and rolled during which water shall be applied the wheels of the rollers, if necessary to wash down the binding material sticking to them. These operations shall continue until the resulting slurry after filling of voids forms a wave ahead of the wheels of the moving roller.
19. After the final compaction of water bound macadam course, the road shall be allowed to any over night Next morning hungry spots shall be filled with screenings of binding materials as directed lightly sprinkled with water, if necessary and rolled. No traffic shall be allowed on the road until the macadam has set. The Engineer - in - charge shall have the discretion to stop hauling traffic from using the completed water bound macadam course, if in his opinion, it would cause excessive damage to the surface.

➤ **Mode of Measurement & Payment**

1. Measurements shall be paid as per the measurements of collection less the quantity remained to be spread and on **cubic meter** basis.
2. The rate includes the cost of screening the Q.S. if any spreading, sectioning, with template and adding reserved quota of metal, while/oiling is in progress for making good hollows and camber.