

NATURALLY RED COLOURED PAVER BLOCKS USING RED SOIL STABILIZATION TECHNIQUE

Technology for naturally red coloured low cost paver blocks. Produces paver blocks which never loses its colour due to wear and tear

Concrete paver blocks replaced of brick paver bricks which had become scarce due to building construction boom and the scarcity of raw materials like clay and fire wood. The casting method of paver block is more advantageous in making the complicated shapes and sizes compared to the wet pressing type of fabrication. Paver blocks with wider range of colour combinations are produced with different type of oxide components. In general, lean layer of coloured concrete is laid and the remaining portion is cast with plain concrete for reducing the cost. In a long run, the top coloured layer lost its colour and fade its appearance. In view of the material scarcity, cost escalation due to the coloring pigments and the losing of colour due to wear and tear, the present research work developed product using the naturally available soil for naturally coloring the complete block, which may not pade in long run. The red soil is such a material naturally available in plenty throughout the country at least cost can be a good source to produce red coloured paver blocks, and also it replaces the fine aggregate requirements which lower paver block cost. The developed red coloured stabilised soil paver blocks showcased a better strength characteristic, pleasant natural colour and reduced cost of products.

Features / Highlights

- Uses naturally available red soil instead of pigments
- Replaces fully or partially the scarce river sand requirement
- Strength can be easily altered for wider application
- High wear and tear resistance
- Low cost (Rs. 25 per block for 30Mpa strength)
- Increased thermal comfort

Technical Details

- Density Range – 2400 kg/m³
- Compressive strength –wide range 20 to 50 MPa
- Less than 3.5% water absorption
- Abrasion resistance – less than 1 %
- Size tolerance – less than 1mm

Applications

- Wider range of application for pathways, vehicle parking sites, cycle ways and for motor ways. The developed paver blocks are suitable for both light weight to heavy weight vehicle usage. Self-interlocking system which is suitable for laying above the percolation concrete pathways



Silty red soil



Typical mixing view



Typical casting



Typical stacking, curing and unloading view

Status of Technology

- Preliminary studies on mix development using different source materials
- Design and development of building blocks for grades M20 to M50
- Naturally coloured with red soil with soil stabilisation techniques
- Silty and gravel red soil types are examined

Future Plan

- Development of blocks with partially adding red colour pigments for mass production
- Demonstrating wider area like assembly grounds



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