# N. & Sales Col Hine Alement #1 +1 **Engineering Information**

## **Engineering Information**

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Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10:1      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      8 to 12 tons.        Brick in mortar      8 to 12 tons.        Brick in Cement concrete 10:1      3.5 tons.        Brick in Conce      3.5 tons.        Brituminous Coal      3.6 tons.        Andree of Repose      3.6 tons.        Soft fron Ore      35.5 tons.        Sand (dry)      2.5 to 35.9        Sand (dry)      2.5 to 45.9        Sand (dry)      2.5 to 40.9        Chaes      2.5 to 40.9        Chaes	Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Lime concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Briteminous Coal      30°        Angle of Repose      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Caver      30° to 45°        Sand (wet)      25° to 45°        Sand (wet)      25° to 40°        Chae      30° to 40°        Chae      22° to 30°        Sand wet      22° to 30°        Sand (dry)      28°        Sand (dry)      28°        Caver      20° to 40°        Chae      22° to 30°        Sand (dry)      28°	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton		
Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10:1      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      8 to 12 tons.        Brick in mortar      8 to 12 tons.        Brick in Cement concrete 10:1      3.5 tons.        Brick in Conce      3.5 tons.        Brituminous Coal      3.6 tons.        Andree of Repose      3.6 tons.        Soft fron Ore      35.5 tons.        Sand (dry)      2.5 to 35.9        Sand (dry)      2.5 to 45.9        Sand (dry)      2.5 to 40.9        Chaes      2.5 to 40.9        Chaes	Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Lime concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Briteminous Coal      30°        Angle of Repose      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Caver      30° to 45°        Sand (wet)      25° to 45°        Sand (wet)      25° to 40°        Chae      30° to 40°        Chae      22° to 30°        Sand wet      22° to 30°        Sand (dry)      28°        Sand (dry)      28°        Caver      20° to 40°        Chae      22° to 30°        Sand (dry)      28°	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton	Limestone      15 tons.        Sandstone      20 tons.        Cernent concrete 5:1      15 tons.        Cernent concrete 10.1      2 to 4 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in cernent      8 to 12 tons.        Rubble      35 tons.        Brick in Cernent      8 to 12 tons.        Rubble      35 tons.        Angles of Repose for Various Materials        Anthrocite Cool      27°        Saled Coal      30°        Ashes      30° to 45°        Sand (dry)      25° to 30°        Sand (Weit)      15° to 30°        Clay      25° to 40°        Coke      30° to 45°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Sand (Weit)      15° to 30°        Coke      30° to 40°        Wheat      28°        Maize      27°        Sand      27°        Coke      30° to 40°        Maize      27°        Barley      27°        Careert      27°        Sand (Woist)      28°
Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10:1      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      8 to 12 tons.        Brick in mortar      8 to 12 tons.        Brick in Cement concrete 10:1      3.5 tons.        Brick in Conce      3.5 tons.        Brituminous Coal      3.6 tons.        Andree of Repose      3.6 tons.        Soft fron Ore      35.5 tons.        Sand (dry)      2.5 to 35.9        Sand (dry)      2.5 to 45.9        Sand (dry)      2.5 to 40.9        Chaes      2.5 to 40.9        Chaes	Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Lime concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Briteminous Coal      30°        Angle of Repose      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Caver      30° to 45°        Sand (wet)      25° to 45°        Sand (wet)      25° to 40°        Chae      30° to 40°        Chae      22° to 30°        Sand wet      22° to 30°        Sand (dry)      28°        Sand (dry)      28°        Caver      20° to 40°        Chae      22° to 30°        Barley      27° to 30° <t< th=""><th>Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton</th><th>Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton</th><th>Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10.1      2 to 4 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Bridk in Cement      8 to 12 tons.        Rubble      35 tons.        Bituminous Coal      30°        Anthrocite Cool      27°        Staked Coal      371/2° to 45°        Ashes      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      25° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Sand (Weist)      25° to 30°        Graver      30° to 45°        Sand(wet)      15° to 30°        Coke      30° to 40°        Wheat      28°        Maize      27°        Barley'      27°        Oats      28°        Cement      17° to 30°    <!--</th--></th></t<>	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton	Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10.1      2 to 4 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Bridk in Cement      8 to 12 tons.        Rubble      35 tons.        Bituminous Coal      30°        Anthrocite Cool      27°        Staked Coal      371/2° to 45°        Ashes      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      25° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Sand (Weist)      25° to 30°        Graver      30° to 45°        Sand(wet)      15° to 30°        Coke      30° to 40°        Wheat      28°        Maize      27°        Barley'      27°        Oats      28°        Cement      17° to 30° </th
Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10:1      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      8 to 12 tons.        Brick in mortar      8 to 12 tons.        Brick in Cement concrete 10:1      3.5 tons.        Brick in Conce      3.5 tons.        Brituminous Coal      3.6 tons.        Andree of Repose      3.6 tons.        Soft fron Ore      35.5 tons.        Sand (dry)      2.5 to 35.9        Sand (dry)      2.5 to 45.9        Sand (dry)      2.5 to 40.9        Chaes      2.5 to 40.9        Chaes	Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Lime concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Briteminous Coal      30°        Angle of Repose      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Caver      30° to 45°        Sand (wet)      25° to 45°        Sand (wet)      25° to 40°        Chae      30° to 40°        Chae      22° to 30°        Sand wet      22° to 30°        Sand (dry)      28°        Sand (dry)      28°        Caver      20° to 40°        Chae      22° to 30°        Barley      27° to 30° <t< th=""><th>Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton</th><th>Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton</th><th>Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10.1      2 to 4 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Bridk in Cement      8 to 12 tons.        Rubble      35 tons.        Bituminous Coal      30°        Anthrocite Cool      27°        Staked Coal      371/2° to 45°        Ashes      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      25° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Sand (Weist)      25° to 30°        Graver      30° to 45°        Sand(wet)      15° to 30°        Coke      30° to 40°        Wheat      28°        Maize      27°        Barley'      27°        Oats      28°        Cement      17° to 30°    <!--</th--></th></t<>	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton	Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10.1      2 to 4 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Bridk in Cement      8 to 12 tons.        Rubble      35 tons.        Bituminous Coal      30°        Anthrocite Cool      27°        Staked Coal      371/2° to 45°        Ashes      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      25° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Sand (Weist)      25° to 30°        Graver      30° to 45°        Sand(wet)      15° to 30°        Coke      30° to 40°        Wheat      28°        Maize      27°        Barley'      27°        Oats      28°        Cement      17° to 30° </th
Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10:1      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      8 to 12 tons.        Brick in mortar      8 to 12 tons.        Brick in Cement concrete 10:1      3.5 tons.        Brick in Conce      3.5 tons.        Brituminous Coal      3.6 tons.        Andree of Repose      3.6 tons.        Soft fron Ore      35.5 tons.        Sand (dry)      2.5 to 35.9        Sand (dry)      2.5 to 45.9        Sand (dry)      2.5 to 40.9        Chaes      2.5 to 40.9        Chaes	Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Lime concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Briteminous Coal      30°        Angle of Repose      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Caver      30° to 45°        Sand (wet)      25° to 45°        Sand (wet)      25° to 40°        Chae      30° to 40°        Chae      22° to 30°        Sand wet      22° to 30°        Sand (dry)      28°        Sand (dry)      28°        Caver      20° to 40°        Chae      22° to 30°        Barley      27° to 30° <t< th=""><th>Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton</th><th>Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton</th><th>Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10.1      2 to 4 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Bride of Repose for Various Materials      30°        Andreo de Cool      27°        Staked Coal      30°        Ashes      30° to 45°        Sand (dry)      25° to 30°        Sand (dry)      25° to 40°        Sand (Moist)      25° to 30°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Sand (Weit)      15° to 30°        Coke      30° to 45°        Sand (Weit)      15° to 30°        Coke      30° to 45°        Sand (Weit)      15° to 30°        Clay      25° to 40°        Oke      30° to 40°        Wheat      28°        Barley      27°        Dats      28°     <tr< th=""></tr<></th></t<>	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton	Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10.1      2 to 4 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Bride of Repose for Various Materials      30°        Andreo de Cool      27°        Staked Coal      30°        Ashes      30° to 45°        Sand (dry)      25° to 30°        Sand (dry)      25° to 40°        Sand (Moist)      25° to 30°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Sand (Weit)      15° to 30°        Coke      30° to 45°        Sand (Weit)      15° to 30°        Coke      30° to 45°        Sand (Weit)      15° to 30°        Clay      25° to 40°        Oke      30° to 40°        Wheat      28°        Barley      27°        Dats      28° <tr< th=""></tr<>
Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10:1      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      8 to 12 tons.        Brick in mortar      8 to 12 tons.        Brick in Cement concrete 10:1      3.5 tons.        Brick in Conce      3.5 tons.        Brituminous Coal      3.6 tons.        Andree of Repose      3.6 tons.        Soft fron Ore      35.5 tons.        Sand (dry)      2.5 to 35.9        Sand (dry)      2.5 to 45.9        Sand (dry)      2.5 to 40.9        Chaes      2.5 to 40.9        Chaes	Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Lime concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Briteminous Coal      30°        Angle of Repose      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Caver      30° to 45°        Sand (wet)      25° to 45°        Sand (wet)      25° to 40°        Chae      30° to 40°        Chae      22° to 30°        Sand wet      22° to 30°        Sand (dry)      28°        Sand (dry)      28°        Caver      20° to 40°        Chae      22° to 30°        Barley      27° to 30° <t< td=""><td>Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton</td><td>Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton</td><td>Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10.1      2 to 4 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Angles of Repose for Various Materials      30°        Anthrocite Cool      27°        Slaked Coal      30°        Ashes      30° to 45°        Sand (dry)      25° to 35°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Sand (Weit)      15° to 30°        Coke      30° to 40°        Wheat      28°        Maize      27°        Barley      27°        Coke      27°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Sand (Weit)      15° to 30°        Clay      27° to 30°        Barley      27°        Coke</td></t<>	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton	Imestone      15 tons, 20 tons, 35 tons, 21 General concrete 101.      35 tons, 21 General concrete 101.        Imestone      21 General 35 tons, 21 General concrete      21 General 35 tons, 21 General 35 tons, 25 ton	Limestone      15 tons.        Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10.1      2 to 4 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in mortar      35 tons.        Brick in Cement      8 to 12 tons.        Rubble      35 tons.        Angles of Repose for Various Materials      30°        Anthrocite Cool      27°        Slaked Coal      30°        Ashes      30° to 45°        Sand (dry)      25° to 35°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Sand (Weit)      15° to 30°        Coke      30° to 40°        Wheat      28°        Maize      27°        Barley      27°        Coke      27°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Sand (Weit)      15° to 30°        Clay      27° to 30°        Barley      27°        Coke
Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete      10 tons.        Brick in correte      20 tons.        Brick in correte      20 tons.        Brick in correte      20 tons.        Brick in Cement      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cement      3.5 tons.        Rubble      3.5 tons.        Bituminous Coal      30°        Angle of Repose      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      30° to 45°        Sand (dry)      25° to 35°        Sand (wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Wheat      28°        Maize      27° to 30°        Barley      27° to 30°        Barley      27°        Oats      28°        Cement      28°        Maize      28°        Cate      28°        Graver      17° to 30°        Dats      28°	Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete      10.1        Line concrete      10 tons.        Brick in mortar      3.5 tons.        Brick in cement      8 to 12 tons.        Brick in Cement      8 to 12 tons.        Brick in Cement      3.5 tons.        Brick in Cement      3.5 tons.        Rubble      3.5 tons.        Bride in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Angle of Repose      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Wheat      28°        Maize      27°        Barley      27°        Oats      28°        Cement      17° to 30°	Sandstone      20 tons,        Cement concrete 5:1      15 tons,        Line concrete      2 to 4 tons,        Bick in mortar      3 5 tons,        Bick in coment      3 to 12 tons,        Rubble      3 5 tons,        Bick in mortar      3 5 tons,        Bick in coment      3 to 12 tons,        Bitwinnous Coal      Angle of Repose        Anthrocite Cool      271/2° to 459        Astes      371/2° to 459        Astes      30° to 459        Sand (day)      25° to 35°        Sand (Moisit)      30° to 459        Sand (Moisit)      30° to 409        Wheat      229° to 359        Barley      279° to 300        Coke      30° to 409        Wheat      229°        Cohe      30° to 409        Wheat      229°        Cohe      30° to 409        Moas      29°        Barley      29°	Sandstone      20 tons,        Cement concrete 5:1      15 tons,        Line concrete      2 to 4 tons,        Bick in mortar      3 5 tons,        Bick in coment      3 to 12 tons,        Rubble      3 5 tons,        Bick in mortar      3 5 tons,        Bick in coment      3 to 12 tons,        Bitwinnous Coal      Angle of Repose        Anthrocite Cool      271/2° to 459        Astes      371/2° to 459        Astes      30° to 459        Sand (day)      25° to 35°        Sand (Moisit)      30° to 459        Sand (Moisit)      30° to 409        Wheat      229° to 359        Barley      279° to 300        Coke      30° to 409        Wheat      229°        Cohe      30° to 409        Wheat      229°        Cohe      30° to 409        Moas      29°        Barley      29°	Sandstone      20 tons.        Cement concrete 5:1      15 tons.        Cement concrete 10.1      3.5 tons.        Brick in mortar      3.5 tons.        Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cement      8 to 12 tons.        Brick in Cement      3.5 tons.        Brick in Cement      3.5 tons.        Brituminous Coal      30°        Angles of Repose for Various Materials      30°        Angles of Repose for Various Materials      30°        Salaked Coal      371/2° to 45°        Sahes      40°        Soft Iron Ore      35°        Sand (dry)      25° to 35°        Sand (wei)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Wheat      28°        Maize      27° to 30°        Barley      27°        Ots      27°        Ots      27°        Ots      28°        Cas      27°        Barley      27°        Ots      27°        Barle
Cement concrete 5:1      15 tons.        Cement concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Brick in Cement      3.5 tons.        Angle of Repose      30°        Anthrocite Cool      27°        Saked Coal      371/2° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 40°        Cinders      25° to 45°        Graver      30° to 40°        Cinders      25° to 45°        Graver      20° to 40°        Coke      30° to 40°        Maize      27° to 30°        Barley      27° to 30°        Barley      28°	Cement concrete 5:1      15 tons.        Cement concrete      2 to 4 tons.        Brick in mortar      3 5 tons.        Brick in Cement      8 to 12 tons.        Brick in Cement      8 to 12 tons.        Brick in Cement      3 5 tons.        Brick in Cement      8 to 12 tons.        Brick in Cement      3 5 tons.        Brick in Cement      8 to 12 tons.        Angle of Repose      30°        Anthroeite Cool      27°        Slaked Coal      371/2° to 45°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (Moist)      30° to 40°        Chee      30° to 40°        Maize      27° to 30°        Barley      27° to 30°        Barley      27° to 30°        Barley      28°        Maize      28°        Barley      28°        Cats      28°        Cohe      17° t	Cement concrete 5:1      15 tons        Cement concrete 10:1      35 tons        Bick in mortar      35 tons        Bick in coment      8 to 12 tons        Bick in coment      35 tons        Bick in coment      35 tons        Bick in coment      8 to 12 tons        Bick in coment      35 tons        Bituminous Coal      371/20 to 450        Anthrocite Cool      371/20 to 450        Soft ino Ore      350        Sand (diy)      250 to 450        Sand (diy)      250 to 450        Sand (wet)      150 to 300        Clave      250 to 450        Sand (wet)      150 to 300        Clave      250 to 400        Coke      300 to 459        Sand (wet)      250 to 400        Coke      300 to 450        Maize      270 to 300        Bafley      270        Bafley      270        Bafley      270        Bafley      270        Bafley      270	Cement concrete 5:1      15 tons        Cement concrete 10:1      35 tons        Bick in mortar      35 tons        Bick in coment      8 to 12 tons        Bick in coment      35 tons        Bick in coment      35 tons        Bick in coment      8 to 12 tons        Bick in coment      35 tons        Bituminous Coal      371/20 to 450        Anthrocite Cool      371/20 to 450        Soft ino Ore      350        Sand (diy)      250 to 450        Sand (diy)      250 to 450        Sand (wet)      150 to 300        Clave      250 to 450        Sand (wet)      150 to 300        Clave      250 to 400        Coke      300 to 459        Sand (wet)      250 to 400        Coke      300 to 450        Maize      270 to 300        Bafley      270        Bafley      270        Bafley      270        Bafley      270        Bafley      270	Cement concrete 5:1      15 tons.        Cement concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in Cement      3.5 tons.        Rubble      3.5 tons.        Bituminous Coal      30°        Angle of Repose      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand(wet)      15° to 30°        Clay      25° to 40°        Coke      30° to 40°        Wheat      28°        Maize      27°        Barley      27°        Oats      27°        Cats      27°        Cats      27°        Cats      27°        Cats      27°<
Cement concrete 10.1      3.5 tons,        Lime concrete      2 to 4 tons,        Brick in mortar      3.5 tons,        Brick in Cement      8 to 12 tons,        Brick in Cement      3.5 tons,        Rubble      3.5 tons,        Brick in Cement      8 to 12 tons,        String of Repose for Various Materials      Angle of Repose        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      25° to 35°        Sand (Wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Wheat      28°        Maize      27°        Oats      28°        28°      28°        Maize      27°        Oats      28°        Diate      28°        Diate      28°        Diate      28°        Diate      28°        Diate      28°	Cement concrete 10.1      3.5 tons.        Lime concrete      3.5 tons.        Brick in mortar      3.5 tons.        Brick in coment      8 to 12 tons.        Brick in Cement      3.5 tons.        Rubble      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      30° to 45°        Ashes      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Craver      25° to 40°        Coke      30° to 40°        Maize      22° to 30°        Barley      27° to 30°        Barley      22° <td< td=""><td>Cement concrete 10.1      3.5 tons,        Lime concrete      2 to 4 tons,        Brick in mortar      3.5 tons,        Brick in Cement      8 to 12 tons,        Rubble      3.5 tons,        Bituminous Coal      30°        Angle of Repose      30°        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Astes      40°        Soft fron Ore      30°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      25° to 35°        Graver,      25° to 45°        Code      30° to 40°        Cinders      25° to 30°        Graver,      25° to 30°        Graver,      25° to 30°        Graver,      27° to 30°        Barley      29°        Oats      17° to 30°        Cats      17° to 30°</td><td>Cement concrete 10.1      3.5 tons,        Lime concrete      2 to 4 tons,        Brick in mortar      3.5 tons,        Brick in Cement      8 to 12 tons,        Rubble      3.5 tons,        Bituminous Coal      30°        Angle of Repose      30°        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Astes      40°        Soft fron Ore      30°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      25° to 35°        Graver,      25° to 45°        Code      30° to 40°        Cinders      25° to 30°        Graver,      25° to 30°        Graver,      25° to 30°        Graver,      27° to 30°        Barley      29°        Oats      17° to 30°        Cats      17° to 30°</td><td>Cement concrete        3.5 tons.          Line concrete        2 to 4 tons.          Brick in mortar        3.5 tons.          Brick in Cement        8 to 12 tons.          Brick in Cement        3.5 tons.          Rubble        3.5 tons.          Brick in Cement        3.5 tons.          Rubble        3.5 tons.          Bituminous Coal        300          Andtroatie Cool        270          Slaked Coal        371/20 to 450          Ashes        400          Soft Iron Ore        350          Band (dry)        250 to 350          Sand (dry)        250 to 350          Graver        300 to 450          Graver        300 to 400          Coke        300 to 400          Miteat        280          Maize        270 to 300          Barley        270 to 300          Coke        300 to 400          Cinders        250 to 400          Coke        300 to 400          Barley        270 to 300          Barley        270 to 300          Dates        280          Cement        170 to 300</td></td<>	Cement concrete 10.1      3.5 tons,        Lime concrete      2 to 4 tons,        Brick in mortar      3.5 tons,        Brick in Cement      8 to 12 tons,        Rubble      3.5 tons,        Bituminous Coal      30°        Angle of Repose      30°        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Astes      40°        Soft fron Ore      30°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      25° to 35°        Graver,      25° to 45°        Code      30° to 40°        Cinders      25° to 30°        Graver,      25° to 30°        Graver,      25° to 30°        Graver,      27° to 30°        Barley      29°        Oats      17° to 30°        Cats      17° to 30°	Cement concrete 10.1      3.5 tons,        Lime concrete      2 to 4 tons,        Brick in mortar      3.5 tons,        Brick in Cement      8 to 12 tons,        Rubble      3.5 tons,        Bituminous Coal      30°        Angle of Repose      30°        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Astes      40°        Soft fron Ore      30°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      25° to 35°        Graver,      25° to 45°        Code      30° to 40°        Cinders      25° to 30°        Graver,      25° to 30°        Graver,      25° to 30°        Graver,      27° to 30°        Barley      29°        Oats      17° to 30°        Cats      17° to 30°	Cement concrete        3.5 tons.          Line concrete        2 to 4 tons.          Brick in mortar        3.5 tons.          Brick in Cement        8 to 12 tons.          Brick in Cement        3.5 tons.          Rubble        3.5 tons.          Brick in Cement        3.5 tons.          Rubble        3.5 tons.          Bituminous Coal        300          Andtroatie Cool        270          Slaked Coal        371/20 to 450          Ashes        400          Soft Iron Ore        350          Band (dry)        250 to 350          Sand (dry)        250 to 350          Graver        300 to 450          Graver        300 to 400          Coke        300 to 400          Miteat        280          Maize        270 to 300          Barley        270 to 300          Coke        300 to 400          Cinders        250 to 400          Coke        300 to 400          Barley        270 to 300          Barley        270 to 300          Dates        280          Cement        170 to 300
Line concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in Cernent      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cernent      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cernent      3.5 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (toam)      30° to 45°        Sand (Moist)      25° to 35°        Sand(wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Wheat      28°        Maize      27°        Oats      28°        Dats      28°	Lime concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      311/2° to 45°        Ashes      30° to 45°        Soft Iron Ore      35°        Barle (Iday)      25° to 35°        Sand (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Moist)      25° to 35°        Sand (Moist)      25° to 35°        Sand (Moist)      25° to 35°        Sand (Moist)      25° to 45°        Craver      30° to 45°        Sand(wet)      15° to 30°        Clay      25° to 30°        Barley      27° to 30°        Barley      27° to 30°        Barley      27°        Oats      28°        Cate      17° to 30°	Line concrete      2 to 4 tons, 3.5 tons, 0.5	Line concrete      2 to 4 tons, 3.5 tons, 0.5	Lime concrete      2 to 4 tons.        Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Brick in Cement      3.5 tons.        Brick in Cement      3.00        Angles of Repose for Various Matterials      Angle of Repose        Bituminous Coal      300°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Sand (dry)      25° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Coke      30° to 40°        Mize      28°        Datiegy      27° to 30°        Barley      28°        Oats      28°        Cement
Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials      Angle of Repose        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (dry)      25° to 45°        Graver.      30° to 45°        Graver.      30° to 45°        Graver.      25° to 40°        Coke      30° to 40°        Wheat      28°        Maize      27°        Barley      27°        Oats      28°        Cement      17° to 30°	Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      3510 to 45°        Ashes      40°        Soft from Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Ocke      30° to 40°        Wheat      28°        Maize      27°        Oats      28°        Cement      17° to 30°	Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Bituminous Coal      300        Anthroatie Cool      270        Slaked Coal      371/20 to 450        Soft fron Ore      350        Sand (dry)      250 to 350        Sand (Moist)      300 to 450        Sand (Moist)      300 to 450        Sand (Moist)      300 to 450        Sand (Moist)      250 to 350        Sand (Moist)      200 to 450        Calver      250 to 300        Calver      250 to 300        Calver      270 to 300        Barley      270        Oats      270        Catter      170 to 300	Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Bituminous Coal      300        Anthroatie Cool      270        Slaked Coal      371/20 to 450        Soft fron Ore      350        Sand (dry)      250 to 350        Sand (Moist)      300 to 450        Sand (Moist)      300 to 450        Sand (Moist)      300 to 450        Sand (Moist)      250 to 350        Sand (Moist)      200 to 450        Calver      250 to 300        Calver      250 to 300        Calver      270 to 300        Barley      270        Oats      270        Catter      170 to 300	Brick in mortar      3.5 tons.        Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials      Angle of Repose.        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand(wet)      15° to 30°        Clay      25° to 45°        Graver.      30° to 40°        Wheat      28°        Maize      27°        Dats      28°        Cement      17° to 30°
Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angle of Repose for Various Materials        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (Ioam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand(wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Wheat      28°        Barley      27°        Oats      28°        280      27°        Data      28°        Data      28°	Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Maize      25° to 30°        Maize      27°        Maize      27°        Oats      22°        Cement      27°        Ashes      27°        Rubble      27°	Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Bituminous Coal      30°        Staked Coal      371/2° to 45°        Ashes      40°        Soft Ion Ore      30° to 45°        Band (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Wet)      15° to 30°        Clay      25° to 30°        Sand (Wet)      25° to 30°        Clay      25° to 30°        Sand (Wet)      25° to 30°        Clay      25° to 30°        Sand (Wet)      25° to 30°        Clay      25° to 30°        Sand (Moist)      30° to 40°        Clay      25° to 30°        Graver      20° to 45°        Clades      27° to 30°        Afaze      27° to 30°        Sand      28°	Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Bituminous Coal      30°        Staked Coal      371/2° to 45°        Ashes      40°        Soft Ion Ore      30° to 45°        Band (Moist)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Wet)      15° to 30°        Clay      25° to 30°        Sand (Wet)      25° to 30°        Clay      25° to 30°        Sand (Wet)      25° to 30°        Clay      25° to 30°        Sand (Wet)      25° to 30°        Clay      25° to 30°        Sand (Moist)      30° to 40°        Clay      25° to 30°        Graver      20° to 45°        Clades      27° to 30°        Afaze      27° to 30°        Sand      28°	Brick in Cement      8 to 12 tons.        Rubble      3.5 tons.        Angles of Repose for Various Materials        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      22° to 35°        Sand (Moist)      30° to 45°        Graver.      30° to 40°        Cinders      25° to 45°        Graver.      30° to 40°        Maize      27° to 30°        Barley      27°        Oats      28°        Cement      17° to 30°
Rubble      3.5 tons.        Angles of Repose for Various Materials        Angle of Repose        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand(wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Wheat      28°        Barley      27°        Oats      28°        17° to 30°      28°        Cenent      17° to 30°	Rubble      3.5 tons.        Angles of Repose for Various Materials      Angle of Repose        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (Mr)      25° to 35°        Sand (Moist)      30° to 45°        Sand(wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 44°        Coke      30° to 40°        Maize      22°        Barley      27°        Dats      28°        Cement      27°        30°      17° to 30°	Rubble      3.5 tons.        Angles of Repose for Various Materials      Angle of Repose for Various Materials        Bituminous Coal      30°        Anthrocite Cool      27°        Salaed Coal      371/2° to 45°        Soft Ion Ore      30°        Sard (Moist)      25° to 33°        Sand (Moist)      30° to 45°        Sand (Woist)      15° to 30°        Clay      25° to 40°        Coke      30° to 45°        Barley      25° to 40°        Coke      30° to 45°        Barley      25° to 30°        Cades      25° to 40°        Coke      30° to 45°        Barley      25° to 30°        Cades      27° to 30°        Barley      27° to 30°        Cate      27° to 30°        Materia      28°        Materia      28°        Materia      28°        Materia      28°        Materia      28°        Materia      28°        Materia      17° to 30°        Data      28°        Cate      17° to 30°	Rubble      3.5 tons.        Angles of Repose for Various Materials      Angle of Repose for Various Materials        Bituminous Coal      30°        Anthrocite Cool      27°        Salaed Coal      371/2° to 45°        Soft Ion Ore      30°        Sard (Moist)      25° to 33°        Sand (Moist)      30° to 45°        Sand (Woist)      15° to 30°        Clay      25° to 40°        Coke      30° to 45°        Barley      25° to 40°        Coke      30° to 45°        Barley      25° to 30°        Cades      25° to 40°        Coke      30° to 45°        Barley      25° to 30°        Cades      27° to 30°        Barley      27° to 30°        Cate      27° to 30°        Materia      28°        Materia      28°        Materia      28°        Materia      28°        Materia      28°        Materia      28°        Materia      17° to 30°        Data      28°        Cate      17° to 30°	Rubble      3.5 tons.        Angles of Repose for Various Materials      Angle of Repose        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (dry)      25° to 35°        Sand (wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Cinders      25° to 40°        Coke      30° to 40°        Maize      27°        Barley      27°        Oats      28°        28°      28°        17° to 30°      28°
Angles of Repose for Various Materials        Angle of Repose        Bituminous Coal      30°        Anthrocite Cool      371/2° to 45°        Saked Coal      371/2° to 45°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (Moist)      30° to 45°        Sand (Woist)      25° to 35°        Sand (Woist)      30° to 45°        Sand (Woist)      25° to 45°        Clay      25° to 45°        Graver      30° to 45°        Maize      27° to 30°        Barley      27° to 30°        Coke      27° to 30°        Maize      27°        Dats      28°        Tobas      17°        Tobas      17°	Angles of Repose for Various Materials        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      30° to 45°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (dry)      25° to 35°        Sand(wet)      15° to 30°        Clay      25° to 45°        Oraver      30° to 44°        Maize      25° to 35°        Barley      25° to 30°        Data      25°        250      10° to 30°        Chees      20° to 30°        Chees      22°        250      25°        Data      28°        Cement      28°        Cement      28°	Angles of Repose for Various Materials        Angle of Repose        Anthrocite Cool      371/2° to 450        Astron      350        Saked Coal      371/2° to 450        Astron      30° to 450        Sand (dry)      25° to 350        Sand (weit)      30° to 450        Sand(weit)      25° to 450        Graver.      30° to 400        Wheat      280        Maize      270        Oats      28        Cament      17° to 300        34      34	Angles of Repose for Various Materials        Angle of Repose        Anthrocite Cool      371/2° to 450        Astron      350        Saked Coal      371/2° to 450        Astron      30° to 450        Sand (dry)      25° to 350        Sand (weit)      30° to 450        Sand(weit)      25° to 450        Graver.      30° to 400        Wheat      280        Maize      270        Oats      28        Cament      17° to 300        34      34	Angles of Repose for Various Materials        Bituminous Coal      30°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (Joan)      30° to 45°        Sand (dry)      25° to 55°        Sand (Moist)      30° to 45°        Sand (Moist)      25° to 45°        Clay      25° to 45°        Graver      30° to 40°        Oke      30° to 40°        Wheat      28°        Barley      27°        Oats      28°        Cenent      17° to 30°
Bituminous Coal        Angle of Repose          Bituminous Coal        30°          Anthrocite Cool        27°          Slaked Coal        371/2° to 45°          Ashes        40°          Soft Iron Ore        35°          Earth (loam)        30° to 45°          Sand (dry)        25° to 35°          Sand (Moist)        30° to 45°          Sand (Moist)        30° to 45°          Sand (wet)        15° to 30°          Clay        25° to 45°          Graver        30° to 40°          Chiders        25° to 45°          Barley        25° to 45°          Graver        30° to 40°          Wheat        28°          27°        30°          Gats        28°          Cement        17° to 30°	Bituminous Coal      30°        Angle of Repose      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand(wet)      15° to 30°        Clay      25° to 45°        Graver      25° to 40°        Coke      30° to 40°        Maize      22°        Barley      27°        Oats      22°        Cement      22°        30°      17° to 30°	Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashtes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Oraver      30° to 45°        Cinders      25° to 40°        Chea      30° to 40°        Cinders      25° to 30°        Barley      27°        Oats      28°        Cement      17° to 30°	Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashtes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Oraver      30° to 45°        Cinders      25° to 40°        Chea      30° to 40°        Cinders      25° to 30°        Barley      27°        Oats      28°        Cement      17° to 30°	Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Clay      25° to 40°        Coke      30° to 40°        Wheat      28°        27°      28°        Maize      27°        Barley      27°        Oats      28°        Cement      17° to 30°
Angle of Repose        Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (Mr)      25° to 35°        Sand (Moist)      30° to 45°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Cinders      25° to 45°        Graver      30° to 40°        Mhaze      27°        Barley      27°        Oats      28°        Cement      17° to 30°	Angle of Repose      30°        Anthrocite Cool      371/2° to 45°        Ashes      371/2° to 45°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Coke      30° to 40°        Meat      25° to 30°        Case      25° to 30°        Case      25° to 30°        Clay      25° to 45°        Graver      30° to 40°        Chaes      25° to 30°        Case      25° to 30°        Case      25° to 30°        Case      25°        Sand (wet)      25° to 30°        Case      25°        Case      27°        Sand Sand      28°        Maize      28°        Cement      28°        Cement      28°        Cement      28°        Cement      28°        Cement      28°        Cement      28°	Angle of Repose          Andhrocite Cool        371/2° to 45°          Ashes        40°          Soft Iron Ore        35°          Earth (loam)        30° to 45°          Sand (Moist)        30° to 45°          Sand (West)        15° to 30°          Cinders        25° to 45°          Graver.        25° to 45°          Graver.        25° to 40°          Coke        30° to 40°          Maize        28°          Barley        29°          Oats        28°          Cement        17° to 30°	Angle of Repose          Andhrocite Cool        371/2° to 45°          Ashes        40°          Soft Iron Ore        35°          Earth (loam)        30° to 45°          Sand (Moist)        30° to 45°          Sand (West)        15° to 30°          Cinders        25° to 45°          Graver.        25° to 45°          Graver.        25° to 40°          Coke        30° to 40°          Maize        28°          Barley        29°          Oats        28°          Cement        17° to 30°	Angle of Repose      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (wei)      15° to 30°        Clay      25° to 45°        Graver      30° to 45°        Cinders      25° to 40°        Cinders      25° to 40°        Coke      30° to 40°        Maize      27°        Barley      27°        Oats      28°        Cement      28°        17° to 30°      28°
Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (Weit)      15° to 30°        Clay      25° to 45°        Graver.      25° to 45°        Cinders      25° to 45°        Maize      25° to 40°        Doke      30° to 40°        Cinders      25° to 40°        Coke      30° to 40°        Barley      27° to 30°        Barley      27°        Oats      28°        Cement      17° to 30°	Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Graver      30° to 40°        Cinders      25° to 40°        Coke      30° to 40°        Maize      28°        Maize      28°        Cement      27° to 30°	Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      15° to 30°        Clay      25° to 45°        Graver      30° to 45°        Cinders      25° to 45°        Graver      30° to 40°        Cinders      25° to 40°        Oats      27° to 30°        Barley      27° to 30°        Save      30° to 40°        Save      25° to 45°        Graver      30° to 40°        Cohe      30° to 40°        Oats      27° to 30°        Barley      27°        Oats      28°        Cement      17° to 30°	Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      15° to 30°        Clay      25° to 45°        Graver      30° to 45°        Cinders      25° to 45°        Graver      30° to 40°        Cinders      25° to 40°        Oats      27° to 30°        Barley      27° to 30°        Save      30° to 40°        Save      25° to 45°        Graver      30° to 40°        Cohe      30° to 40°        Oats      27° to 30°        Barley      27°        Oats      28°        Cement      17° to 30°	Bituminous Coal      30°        Anthrocite Cool      27°        Slaked Coal      371/2° to 45°        Ashes      40°        Soft Iron Ore      35°        Earth (loam)      30° to 45°        Sand (dry)      25° to 35°        Sand (Moist)      30° to 45°        Sand (wet)      15° to 30°        Clay      25° to 45°        Graver.      30° to 40°        Cinders      25° to 40°        Coke      30° to 40°        Maize      27° to 30°        Barley      27° to 30°        Oats      28°        Cement      17° to 30°
Cement	Cement	Cement	Cement	Cement
Cement	Cement	Cement	Cement	Cement
Cement	Cement	Cement	Cement	Cement
Cement	Cement	Cement	Cement	Cement
Cement	Cement	Cement	Cement	Cement
Cement	Cement	Cement	Cement	Cement
Cement	Cement	Cement	Cement	Cement
Cement	Cement	34	34	Cement
Cement	Cement	Cement        34	Cement        34	Cement
Cement	Cement	Cement	Cement	Cement
Cement	Cement	Cement	Cement	Cement
Cement	Cement	Cement        34	Cement        34	Cement
Cement	Cement	34	34	Cement
Cement	Cement	Cement	Cement	Cement
Cement	Cement	Cement	Cement	Cement
Cement	Cement	Cement	Cement	Cement
34	34			34
34	34	34	34	34
	Color Color	Con The State of t	Con The State	

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### **Engineering Information**

Chinamunosta St. (H. T.)

## LOADS

Structures are designed for the worst Combination of dead and live loads; wherever applicable, wind loads, seismis forces and secondary effects such as shrinkage, the rise or fall in temperature, etc. must also be considered.

#### Dead Loads :

The dead weight of a number of materials and structural item is given in the Table No. 1. In using these figures it should be noted that the density of most materials varies within certain well defined limits and this variation can, therefore, effect the imposed loading. The figurein the table are however, sufficiently accurate for normal design purpose.

#### Live Loads :

The live load lo be used for the design of floors and roofs in building are given in table 2 & 3 respectively. They are considered as uniformally distributed static loads on the plan area and include the effects of normal impact. They, however do not take in to consideration special concentrated loads nor do they cater for loads incidential to construction and special cases of Vibration such as moving machinery, heavy acceleration from cranes hosits and the like, such loads should be dealt with individually in each case

The figure given in Table No. 2 & 3 are conversions from the loading specified in the Indian standard Code of Practice; No. 875-1975 and their application should, therefore be read in conjuction with the provisions of this code.

#### Wind Pressure :

The basic pressure induced by wind loads for various heights of exposed surface are given in Table No. 4. The figures are based on table III of the LS. Code of Practice No. 875-1957 and their application should confirm to the provision contained in clause 4 of the code.

#### Earth Pressure :

The value of the horizontal pressure exerted by a retained material is obtained from the normal Rankin's formula, which for a level fill retained against in vertical surface is expressed as :

 $P = wh \frac{1}{1 x \sin \emptyset}$  $1 - \sin \emptyset$ 

