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**中华人民共和国行业标准 JGJ**

**P JGJ/T 23-20XX**

**回弹法检测混凝土抗压强度技术规程**

**Technical specification for inspecting of concrete compressive strength by rebound method**

**征求意见稿**

20XX－XX－XX 发布 20XX－XX－XX 实施

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| 中华人民共和国住房和城乡建设部 |
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**前 言**

根据住房和城乡建设部标准定额司<建司局函标[2021]36号>标准编制工作函的要求，行业标准《回弹法检测混凝土抗压强度技术规程》JGJ/T 23-2011被纳入修订计划，规程编制组经过广泛的调查研究，认真总结实践经验，参考国内外先进标准，并在广泛征求意见的基础上，修订了本规程。

本规程的主要技术内容是：1.总则；2.术语和符号；3.回弹仪；4.检测技术；5.回弹值计算；6.测强曲线；7.混凝土强度计算。

修订的主要技术内容是：1.增加了M225型回弹仪在质量为1.05Kg钢砧上的率定要求；2.增加了泵送混凝土底面向上回弹统一测强曲线；3.增加了高强混凝土统一测强曲线；4.增加了碳化深度限值的规定；5.修订了泵送混凝土统一测强曲线；6.修订了测区回弹测点数量及计算方式；7.修订了统一测强曲线的适用龄期。

本规程由住房和城乡建设部负责管理，陕西省建筑科学研究院有限公司负责具体技术内容的解释。执行过程中如有意见或建议，请寄送陕西省建筑科学研究院有限公司（地址：西安市莲湖区环城西路北段272号，邮政编码：710082， E-mail:915468439@qq.com）

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# 1 总 则

**1.0.1**  为统一使用回弹仪检测普通混凝土抗压强度的方法，保证检测精度，制定本规程。

**1.0.2** 本规程适用于普通混凝土抗压强度（以下简称混凝土强度）的检测，不适用于表层与内部质量有明显差异或内部存在缺陷的混凝土强度检测。

**1.0.3** 使用回弹法进行检测的人员，应通过专门的技术培训。

**1.0.4** 回弹法检测混凝土强度除应符合本规程外，尚应符合国家现行有关标准的规定。

# 2 术 语 和 符 号

## 2.1 术 语

**2.1.1** 测区 test area

检测构件混凝土强度时的一个检测单元。

**2.1.2** 测点 test point

测区内的一个回弹检测点。

**2.1.3**  测区混凝土强度换算值 conversion value of concrete compressive strength of test area

由测区的回弹平均值、碳化深度值等参数，通过测强曲线或测区强度换算表得到的测区现龄期混凝土强度值。

**2.1.4** 混凝土强度推定值 estimation value of strength for concrete

相应于强度换算值总体分布中保证率不低于95%的构件现龄期混凝土强度值。

## 2.2 符 号

|  |  |  |
| --- | --- | --- |
|  | —— | 第i个碳化深度测量位置的碳化深度值。 |
|  | —— | 构件所有测区的平均碳化深度值。 |
|  | —— | 测区混凝土强度换算值。 |
|  | —— | 芯样试件混凝土强度平均值。 |
|  | —— | 同条件立方体试块混凝土强度平均值。 |
|  | —— | 对应于钻芯部位或同条件试块回弹测区混凝土强度换算值的平均值。 |
|  | —— | 第*i*个混凝土芯样试件的抗压强度。 |
|  | —— | 第*i*个混凝土立方体试块的抗压强度。 |
|  | —— | 修正前第*i*个测区的混凝土强度换算值。 |
|  | —— | 修正后第*i*个测区的混凝土强度换算值。 |
|  | —— | 构件中测区混凝土强度换算值的最小值。 |
|  | —— | 构件混凝土强度推定值。 |
|  | —— | 测区混凝土强度换算值的平均值。 |
|  | —— | 构件测区混凝土强度换算值的标准差。 |
|  | —— | 测区第*i*个测点的回弹值。 |
|  | —— | 测区或试块的平均回弹值。 |
|  | —— | 回弹仪非水平方向检测时，测区的平均回弹值。 |
|  | —— | 回弹仪在水平方向检测混凝土浇筑表面时，测区的平均回弹值。 |
|  | —— | 回弹仪在水平方向检测混凝土浇筑底面时，测区的平均回弹值。 |
|  | —— | 回弹仪检测混凝土浇筑表面时，回弹值的修正值。 |
|  | —— | 回弹仪检测混凝土浇筑底面时，回弹值的修正值。 |
|  | —— | 非水平方向检测时，回弹值的修正值。 |
|  | —— | 测区混凝土强度修正量。 |

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# 3 回 弹 仪

## 3.1 技 术 要 求

**3.1.1** 回弹仪宜为数字式，也可为指针直读式。

**3.1.2**  回弹仪应具有产品合格证，并应在回弹仪的明显位置上标注名称、型号、制造厂名或商标、出厂编号等。

**3.1.3** 本规程应采用M225型回弹仪或H550型回弹仪。

**3.1.4**  回弹仪除应符合现行国家标准《回弹仪》GB/T 9138的规定外，尚应符合下列规定：

**1** 水平方向弹击时，M225型回弹仪和H550型回弹仪在弹击锤脱钩瞬间的标称能量应分别为2.207J、5.500J；

**2** 回弹仪率定值应满足表3.1.4的要求。

表3.1.4 回弹仪率定值

|  |  |  |  |
| --- | --- | --- | --- |
| 回弹仪型号 | 钢砧硬度（HRC） | 钢砧重量（kg） | 率定值 |
| M225 | 60±2 |  | 42±2 |
|  | 80±2 |
| H550 |  | 83±2 |

**3** 在弹击锤与弹击杆碰撞的瞬间，弹击拉簧应处于自由状态，且弹击锤起跳点应位于指针指示刻度尺上“0”处；

**4** 数字式回弹仪应带有指针直读示值系统，数字显示的回弹值与指针直读示值相差不应超过1。

**3.1.5** 回弹仪使用时的环境温度应为（－4～＋40）℃。

## 3.2 检 定

**3.2.1** 回弹仪检定周期为半年，当回弹仪具有下列情况之一时，应按现行国家计量检定规程《回弹仪》JJG817进行检定：

**1** 新回弹仪启用前；

**2** 超过检定有效期限；

**3** 数字式回弹仪数字显示的回弹值与指针直读示值相差大于1；

**4** 经保养后钢砧率定值不合格；

**5** 遭受严重撞击或其他损害。

**3.2.2**  回弹仪率定试验应符合下列规定：

**1** 环境温度（5～35）℃；

**2** 钢砧表面干燥、清洁，并稳固地平放在刚度大的物体上；

**3** 率定时弹击杆分四个方向进行，且每个方向弹击前，弹击杆旋转90度；

**4** 每个方向率定值取连续向下弹击三次的稳定回弹值的平均值，且均满足本规程第3.1.4条第2款要求。

**3.2.3** 回弹仪率定用钢砧应每2年送计量检定机构检定或校准。

## 3.3 保 养

**3.3.1** 当回弹仪存在下列情况之一时，应进行保养：

**1** 回弹仪弹击超过6000次；

**2** 率定值不合格；

**3** 对检测值有怀疑。

**3.3.2** 回弹仪的保养应按下列步骤进行：

**1** 先将弹击锤脱钩，取出机芯，然后卸下弹击杆，取出里面的缓冲压簧，并取出弹击锤、弹击拉簧和拉簧座；

**2** 清洁机芯各零部件，并应重点清理中心导杆、弹击锤和弹击杆的内孔及冲击面。清理后，应在中心导杆上薄薄涂抹钟表油，其他零部件不得抹油；

**3** 清理机壳内壁，卸下刻度尺，检查指针，其摩擦力应为(0.5~0.8)N；

**4** 对于数字式回弹仪，还应按产品要求的维护程序进行维护；

**5** 保养时，不得旋转尾盖上已定位紧固的调零螺丝，不得自制或更换零部件；

**6** 保养后应按本规程第3.2.2条的规定进行率定。

**3.3.3** 回弹仪使用完毕，应清除弹击杆、杆前端球面以及刻度尺表面和外壳上的污垢、尘土。回弹仪不用时，应将弹击杆压入机壳内，装入仪器箱。仪器箱应平放在干燥阴凉处。当数字式回弹仪长期不用时，应取出电池或定期充电。

# 4 检 测 技 术

## 4.1 一 般 规 定

**4.1.1** 采用回弹法检测混凝土强度时，宜具有下列资料：

**1** 工程名称、建设单位、设计单位、施工单位。

**2** 构件名称、数量及混凝土类型、强度等级。

**3** 混凝土配合比。

**4** 施工模板，混凝土浇筑、养护情况及浇筑日期等。

**5** 必要的设计图纸和施工记录。

**6** 检测原因。

**4.1.2** 回弹仪在检测前和检测后，均应在钢砧上做率定试验，并应符合本规程第3.1.4条的规定。

**4.1.3** 混凝土强度按单个构件检测时，应符合下列规定：

**1** 对于一般构件，测区数不宜少于10个。若受检构件检测面某一方向尺寸不大于4.5m且另一方向尺寸不大于0.3m时，构件测区数量可适当减少，但不应少于5个。

**2** 测区宜均匀布置，相邻两测区的间距不应大于2m，测区离构件端部或施工缝边缘的距离不宜大于0.5m，且不宜小于0.2m。

**3**  测区宜选在能使回弹仪处于水平方向弹击混凝土的浇筑侧面。当不能满足这一要求时，也可选在使回弹仪处于非水平方向检测混凝土的浇筑表面。

**4** 测区宜布置在构件的两个对称的可测面上，当不能布置在对称的可测面上时，也可布置在同一可测面上，且应均匀分布。在构件的重要部位及薄弱部位应布置测区，并应避开预埋件。

**5** 测区的面积不宜大于0.09m2。

**6** 测区表面应为混凝土原浆面，并应清洁、平整、干燥，不应有疏松层、浮浆、油垢、涂层以及蜂窝、麻面。

**4.1.4** 混凝土强度按批量检测时，应符合下列规定：

**1** 混凝土生产工艺、强度等级相同，原材料、配合比、养护条件基本一致且龄期相近的同类构件可以组成一个检验批。

**2** 受检构件应随机抽取，抽检数量不宜少于同批构件总数的30%且不宜少于10件。当检验批中抽检构件数量大于30个时可适当调整，但不得少于《混凝土结构现场检测技术标准》GB/T 50784规定的最小抽检数量。

**3** 当检验批中抽检构件尺寸满足第4.1.3条第1款要求时，该构件的测区数量可适当减少，但不应少于5个。

**4** 当检验批中抽检构件数量大于30个，且不需要提供单个构件推定强度时，每个构件的测区数量可适当减少，但不应少于5个。

**4.1.5**  测区应标有清晰的编号，宜在混凝土构件表面采用适当方式进行标注，并绘制测区布置示意图和记录外观质量情况。

**4.1.6** 当检测条件与专用测强曲线、地区测强曲线及本规程第6.2.1条的适用条件均有较大差异时，或对回弹检测结果有怀疑时，可在构件上采用钻取芯样或同条件试块对测区混凝土强度换算值进行修正。同一检验批混凝土强度修正时，直径100mm芯样试件的数量不应少于6个，小直径芯样试件的数量不应少于9个，高径比宜为1。芯样位置应具有代表性且在测区内钻取，每个芯样只加工一个试件。同条件试块修正时，试块数量不应少于6个，试块边长应为150mm。计算时，测区混凝土强度修正量及测区混凝土强度换算值的修正应符合下列规定：

**1** 修正量应按下列公式计算：

=－ （4.1.6-1）

=－ （4.1.6-2）

=  （4.1.6-3）

=  （4.1.6-4）

=  （4.1.6-5）

式中：——测区混凝土强度修正量(MPa)，精确到0.1MPa；

——芯样试件混凝土强度平均值(MPa)，精确到



0.1MPa；

——150㎜同条件立方体试块混凝土强度平均值

(MPa)，精确到0.1MPa；

——对应于钻芯部位或同条件立方体试块回弹测



区混凝土强度换算值的平均值(MPa)，精确到

0.1MPa；

——第*i*个混凝土芯样试件的抗压强度；

——第*i*个混凝土立方体试块的抗压强度；

——对应于第*i*个芯样部位或同条件立方体试块测



区回弹值和碳化深度值的混凝土强度换算值，

可按本规程附录A或附录D、附录E、附录

F取值；

——芯样或试块数量。



**2** 测区混凝土强度换算值的修正应按下列公式计算：

= + （4.1.6-6）

式中：——第*i*个测区修正前的混凝土强度换算值 (MPa)，精确到0.1MPa。

——第*i*个测区修正后的混凝土强度换算值(MPa)，精确到0.1MPa。

## 4.2 回 弹 值 测 量

**4.2.1** M225型回弹仪用于检测强度等级C10~C60的混凝土构件，H550型回弹仪用于检测强度等级C60~C80的混凝土构件。

**4.2.2** 测量回弹值时，回弹仪的轴线应始终垂直于混凝土检测面，并应缓慢施压、准确读数、快速复位。

**4.2.3**  每一测区应读取12个回弹值，每一测点的回弹值读数应精确至1。测点宜在测区范围内均匀分布，相邻两测点的净距离不宜小于20mm；测点距外露钢筋、预埋件的距离不宜小于30mm；测点不应在气孔或外露石子上，同一测点应只弹击一次。

## 4.3 碳 化 深 度 值 测 量 与 计 算

**4.3.1** 应在有代表性的回弹测区上测量碳化深度值，测点数不应少于构件测区数的30%且不少于3个并分布于不同测区。当测区碳化深度值极差大于2.0mm时，应在每一测区分别测量碳化深度值。

**4.3.2** 碳化深度值的测量应符合下列规定：

**1** 可采用工具在测区表面形成直径约15mm的孔洞，其深度应大于混凝土的碳化深度；

**2** 应清除孔洞中的粉末和碎屑，且不得用水擦洗；

**3** 应采用浓度为1%～2％的酚酞酒精溶液滴在孔洞内壁的边缘处，当已碳化与未碳化界线清晰时，采用专用测量仪器测量已碳化与未碳化混凝土交界面到混凝土表面的垂直距离。

**4** 每个测点应连续测量3次，取3次测量结果的平均值作为该测区碳化深度值，精确至0.25mm。

**5** 当测区碳化深度值的极差不大于2.0mm时，以测区碳化深度平均值为构件所有测区的碳化深度值，按公式（4.3.2-1）计算：

=  （4.3.2-1）

式中：

—— 构件所有测区的平均碳化深度值，当＞6.0 mm时，

取=6.0 mm，精确至0.5 mm；

—— 构件第i个碳化深度测量位置的碳化深度值，精确至

0.25 mm；

n —— 测量碳化深度的测区数。

**6** 当测区碳化深度值的极差大于2.0mm时，测区强度换算值应采用该测区对应的碳化深度值进行计算。

**4.3.3** 对于龄期小于一年的混凝土构件进行强度检测时，当平均碳化深度值（dm）超过表4.3.3的碳化深度值限值要求时，宜采取表4.3.3中对应的碳化深度值限值，也可采用本规程第4.1.6条进行修正。



表4.3.3碳化深度值限值

|  |  |
| --- | --- |
| 混凝土龄期（月） | 碳化深度值限值（mm） |
| ≤3 | 2.0 |
| ≤12 | 4.0 |

注：碳化深度值限值可根据实际龄期线性内插，结果精确至0.5mm。

## 4.4 检 测 面 选 择

**4.4.1** 非泵送混凝土构件强度检测时，检测面应按照水平侧面、非水平侧面、非水平非侧面的顺序选择。

**4.4.2** 泵送混凝土构件强度检测时，检测面应按下列情况选择：

**1** 现浇板类构件，应选择混凝土的浇筑底面；

**2** 非现浇板类构件，应选择混凝土的浇筑侧面。

# 5 回 弹 值 计 算

**5.0.1** 计算测区平均回弹值时，应从该测区的12个回弹值中剔除1个最大值和1个最小值，其余的10个回弹值按下式计算：



（5.0.1）

式中： ——测区平均回弹值，精确至0.1；

——第*i*个测点的回弹值。

**5.0.2** 非水平方向检测非泵送混凝土浇筑侧面时，测区的平均回弹值应按下式修正：

**  （5.0.2）



式中：——非水平方向检测时测区的平均回弹值，精确至0.1；

——非水平方向检测时回弹值修正值，应按本规程附录B取值。

**5.0.3** 水平方向检测非泵送混凝土浇筑表面或浇筑底面时，测区的平均回弹值应按下列公式修正：

（5.0.3-1）

（5.0.3-2）

式中：、——水平方向检测混凝土浇筑表面、底面时，测区的平均回弹值，精确至0.1；

、—— 混凝土浇筑表面、底面回弹值的修正值，应按本规程附录C取值。

**5.0.4** 当既有浇筑面修正又有测试角度修正时，应先对回弹值进行角度修正，然后再对修正后的回弹值进行浇筑面修正。

# 6 测 强 曲 线

## 6.1 一 般 规 定

**6.1.1** 混凝土强度换算值可采用下列测强曲线计算：

**1** 统一测强曲线：由全国有代表性的材料、成型工艺制作的混凝土试件，通过试验所建立的测强曲线。

**2** 地区测强曲线：由本地区常用的材料、成型工艺制作的混凝土试件，通过试验所建立的测强曲线。

**3** 专用测强曲线：由与构件混凝土相同的材料、成型养护工艺制作的混凝土试件，通过试验所建立的测强曲线。

**6.1.2** 有条件的地区和部门，应制定本地区的测强曲线或专用测强曲线。检测单位宜按专用测强曲线、地区测强曲线、统一测强曲线的顺序选用测强曲线。

## 6.2 统 一 测 强 曲 线

**6.2.1** 使用统一测强曲线的混凝土应符合下列条件：

**1** 混凝土采用的水泥、砂石、外加剂、掺合料、拌合用水符合国家现行有关标准；

**2** 采用普通成型工艺；

**3** 采用符合国家标准规定的模板；

**4** 蒸汽养护出池经自然养护7 d以上，且混凝土表层为干燥状态；

**5** 自然养护且龄期为：（14～1800）d；

**6** 抗压强度为：（10.0～80.0）MPa 。

**6.2.2** 符合第6.2.1条规定，抗压强度在（10~60）MPa的非泵送混凝土，测区强度应按本规程附录**A**进行强度换算。

**6.2.3** 符合第6.2.1条规定，抗压强度在（10~80）MPa的泵送混凝土，测区强度应按下列要求进行强度换算。

**1** 抗压强度在（10~60）MPa的现浇板类泵送混凝土构件，测区强度可按本规程附录**D**的规定进行强度换算。

**2** 抗压强度在（10~60）MPa的非现浇板类泵送混凝土构件，测区强度可按本规程附录**E**的规定进行强度换算。

**3** 抗压强度在（60~80）MPa的非现浇板类泵送混凝土构件，测区强度可按本规程附录**F**的规定进行强度换算。

**6.2.4** 泵送混凝土统一测强曲线，其强度误差值应符合下列规定：

**1** 强度范围（10~60）MPa时：平均相对误差（*δ*）不应大于±15.0 %，相对标准差（*er*）不应大于18.0 %；

**2** 强度范围（60~80）MPa时：平均相对误差（*δ*）不应大于±10.0 %，相对标准差（*er*）不应大于12.0 %。

**6.2.5** 当有下列情况之一时，测区混凝土强度不得按本规程附录**A**、附录**D**、附录**E**、附录**F**进行强度换算。

**1**  非泵送混凝土粗集料最大公称粒径大于60mm，泵送混凝土粗集料最大公称粒径大于40mm；

**2** 特种成型工艺制作的混凝土；

**3** 检测部位曲率半径小于250mm；

**4** 潮湿或浸水混凝土。

## 6.3 地 区 和 专 用 测 强 曲 线

**6.3.1** 地区和专用测强曲线的强度误差应符合下列规定：

**1** 地区测强曲线

强度范围（10~60）MPa时：平均相对误差（*δ*）不应大于±14.0 %，相对标准差（*er*）不应大于17.0 %；

强度范围（60~80）MPa时：平均相对误差（*δ*）不应大于±9.0 %，相对标准差（*er*）不应大于11.0 %。

**2** 专用测强曲线

强度范围（10~60）MPa时：平均相对误差（*δ*）不应大于±12.0 %，相对标准差（*er*）不应大于14.0 %；

强度范围（60~80）MPa时：平均相对误差（*δ*）不应大于±8.0 %，相对标准差（*er*）不应大于10.0 %。

**3** 平均相对误差（*δ*）和相对标准差（*er*）的计算应符合本规程附录G的规定。

**6.3.2** 地区和专用测强曲线应按本规程附录G的方法制定。使用地区或专用测强曲线时，被检测的混凝土应与制定该类测强曲线混凝土的适应条件相同，不得超出该类测强曲线的适应范围，并应经常抽取一定数量的同条件试件进行校核，发现有显著差异时，应及时查找原因，不得继续使用。

# 7 混 凝 土 强 度 计 算

**7.0.1** 构件第*i*个测区混凝土强度换算值，可按本规程第5章所求得的平均回弹值（*R*m）及按本规程第4.3条所求得的平均碳化深度值（dm），由本规程附录**A**、附录**D**、附录**E**、附录**F**查表或计算得出。当有地区或专用测强曲线时，混凝土强度的换算值宜按地区测强曲线或专用测强曲线计算或查表得出。



**7.0.2**  构件的测区混凝土强度平均值应根据各测区的混凝土强度换算值计算。当测区数为10个及以上时，还应计算强度标准差。平均值及标准差应按下列公式计算：

 （7.0.2-1）

 （7.0.2-2）

式中： —— 构件测区混凝土强度换算值的平均值（MPa），精确至0.1MPa；

*n* —— 对于单个检测的构件，取该构件的测区数；对批

量检测的构件，取所有被抽检构件测区数之和；

 —— 构件测区混凝土强度换算值的标准差（MPa），精

确至0.01MPa。

**7.0.3** 构件的现龄期混凝土强度推定值（）应符合下列规定：

**1** 当构件测区数少于10个时，应按下式计算：

= （7.0.3-1）

式中 ——构件中最小的测区混凝土强度换算值。

**2** 当构件测区数不少于10个时，应按下式计算：

  （7.0.3-2）

**3** 当批量检测时，应按下式计算：

  （7.0.3-3）

式中 ：——推定系数，取1.645。当需要推定强度区间时，可按《混凝土结构现场检测技术标准》GB/T 50784的规定取值。



注：构件的混凝土强度推定值是指相应于强度换算值总体分布中保证率不低于95%的构件中混凝土抗压强度值。

**7.0.4** 采用M225型回弹仪进行检测时，构件强度推定值应符合下列要求：

**1** 构件测区强度换算值中出现小于10.0MPa时，应按下式确定：

＜ 10.0MPa （7.0.4-1）

**2** 构件测区强度换算值中出现大于60.0MPa时，当推定单个构件强度时按公式7.0.3-1计算。当按批量推定混凝土强度时，该测区强度换算值取60.0MPa，构件强度推定值按公式7.0.3-3计算；

**3** 构件测区强度换算值均大于60.0MPa时，应按下式确定：

> 60.0MPa （7.0.4-2）

**7.0.5** 采用H550型回弹仪进行检测时，构件强度推定值应符合下列要求：

**1** 构件测区强度换算值中出现小于60.0MPa时，应按下式确定：

＜ 60.0MPa （7.0.5-1）

**2** 构件测区强度换算值中出现大于80.0MPa时，当推定单个构件混凝土强度时按公式7.0.3-1计算。当按批量推定混凝土强度时，该测区强度换算值取80.0MPa，构件强度推定值按公式7.0.3-3计算；

**3** 构件测区强度换算值均大于80.0MPa时，应按下式确定：

> 80.0MPa （7.0.5-2）

**7.0.6** 对按批量检测的构件，当该批构件混凝土强度标准差出现下列情况之一时，该批构件应全部按单个构件检测：

**1**  当该批构件混凝土强度平均值小于25MPa、大于4.5MPa时；

**2**  当该批构件混凝土强度平均值不小于25MPa且不大于60MPa、大于5.5MPa时；

**3**  当该批构件混凝土强度平均值不小于60MPa且不大于80MPa、大于6.5MPa时。

**7.0.7**  回弹法检测混凝土抗压强度检测报告、过程记录单可按本规程附录H的格式编写。

# 附录A 非泵送混凝土测区强度换算表

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表A 测区混凝土强度换算表** | | | | | | | | | | | | | |
| **平均**  **回弹**  **值Rm** | **测区混凝土强度换算值 （MPa）** | | | | | | | | | | | | |
| **平均碳化深度值dm（mm）** | | | | | | | | | | | | |
| **0.0** | **0.5** | **1.0** | **1.5** | **2.0** | **2.5** | **3.0** | **3.5** | **4.0** | **4.5** | **5.0** | **5.5** | **≥6.0** |
| 20.0 | 10.3 | 10.1 | — | — | — | — | — | — | — | — | — | — | — |
| 20.2 | 10.5 | 10.3 | 10.0 | — | — | — | — | — | — | — | — | — | — |
| 20.4 | 10.7 | 10.5 | 10.2 | — | — | — | — | — | — | — | — | — | — |
| 20.6 | 11.0 | 10.8 | 10.4 | 10.1 | — | — | — | — | — | — | — | — | — |
| 20.8 | 11.2 | 11.0 | 10.6 | 10.3 | — | — | — | — | — | — | — | — | — |
| 21.0 | 11.4 | 11.2 | 10.8 | 10.5 | 10.0 | — | — | — | — | — | — | — | — |
| 21.2 | 11.6 | 11.4 | 11.0 | 10.7 | 10.2 | — | — | — | — | — | — | — | — |
| 21.4 | 11.8 | 11.6 | 11.2 | 10.9 | 10.4 | 10.0 | — | — | — | — | — | — | — |
| 21.6 | 12.0 | 11.8 | 11.4 | 11.0 | 10.6 | 10.2 | — | — | — | — | — | — | — |
| 21.8 | 12.3 | 12.1 | 11.7 | 11.3 | 10.8 | 10.5 | 10.1 | — | — | — | — | — | — |
| 22.0 | 12.5 | 12.2 | 11.9 | 11.5 | 11.0 | 10.6 | 10.2 | — | — | — | — | — | — |
| 22.2 | 12.7 | 12.4 | 12.1 | 11.7 | 11.2 | 10.8 | 10.4 | 10.0 | — | — | — | — | — |
| 22.4 | 13.0 | 12.7 | 12.4 | 12.0 | 11.4 | 11.0 | 10.7 | 10.3 | 10.0 | — | — | — | — |
| 22.6 | 13.2 | 12.9 | 12.5 | 12.1 | 11.6 | 11.2 | 10.8 | 10.4 | 10.2 | — | — | — | — |
| 22.8 | 13.4 | 13.1 | 12.7 | 12.3 | 11.8 | 11.4 | 11.0 | 10.6 | 10.3 | — | — | — | — |
| 23.0 | 13.7 | 13.4 | 13.0 | 12.6 | 12.1 | 11.6 | 11.2 | 10.8 | 10.5 | 10.1 | — | — | — |
| 23.2 | 13.9 | 13.6 | 13.2 | 12.8 | 12.2 | 11.8 | 11.4 | 11.0 | 10.7 | 10.3 | 10.0 | — | — |
| 23.4 | 14.1 | 13.8 | 13.4 | 13.0 | 12.4 | 12.0 | 11.6 | 11.2 | 10.9 | 10.4 | 10.2 | — | — |
| 23.6 | 14.4 | 14.1 | 13.7 | 13.2 | 12.7 | 12.2 | 11.8 | 11.4 | 11.1 | 10.7 | 10.4 | 10.1 | — |
| 23.8 | 14.6 | 14.3 | 13.9 | 13.4 | 12.8 | 12.4 | 12.0 | 11.5 | 11.2 | 10.8 | 10.5 | 10.2 | — |
| 24.0 | 14.9 | 14.6 | 14.2 | 13.7 | 13.1 | 12.7 | 12.2 | 11.8 | 11.5 | 11.0 | 10.7 | 10.4 | 10.1 |
| 24.2 | 15.1 | 14.8 | 14.3 | 13.9 | 13.3 | 12.8 | 12.4 | 11.9 | 11.6 | 11.2 | 10.9 | 10.6 | 10.3 |
| 24.4 | 15.4 | 15.1 | 14.6 | 14.2 | 13.6 | 13.1 | 12.6 | 12.2 | 11.9 | 11.4 | 11.1 | 10.8 | 10.4 |
| 24.6 | 15.6 | 15.3 | 14.8 | 14.4 | 13.7 | 13.3 | 12.8 | 12.3 | 12.0 | 11.5 | 11.2 | 10.9 | 10.6 |
| 24.8 | 15.9 | 15.6 | 15.1 | 14.6 | 14.0 | 13.5 | 13.0 | 12.6 | 12.2 | 11.8 | 11.4 | 11.1 | 10.7 |
| 25.0 | 16.2 | 15.9 | 15.4 | 14.9 | 14.3 | 13.8 | 13.3 | 12.8 | 12.5 | 12.0 | 11.7 | 11.3 | 10.9 |
| 25.2 | 16.4 | 16.1 | 15.6 | 15.1 | 14.4 | 13.9 | 13.4 | 13.0 | 12.6 | 12.1 | 11.8 | 11.5 | 11.0 |
| 25.4 | 16.7 | 16.4 | 15.9 | 15.4 | 14.7 | 14.2 | 13.7 | 13.2 | 12.9 | 12.4 | 12.0 | 11.7 | 11.2 |
| 25.6 | 16.9 | 16.6 | 16.1 | 15.7 | 14.9 | 14.4 | 13.9 | 13.4 | 13.0 | 12.5 | 12.2 | 11.8 | 11.3 |
| 25.8 | 17.2 | 16.9 | 16.3 | 15.8 | 15.1 | 14.6 | 14.1 | 13.6 | 13.2 | 12.7 | 12.4 | 12.0 | 11.5 |

| **续表A** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **平均**  **回弹**  **值Rm** | **测区混凝土强度换算值 （MPa）** | | | | | | | | | | | | |
| **平均碳化深度值dm（mm）** | | | | | | | | | | | | |
| **0.0** | **0.5** | **1.0** | **1.5** | **2.0** | **2.5** | **3.0** | **3.5** | **4.0** | **4.5** | **5.0** | **5.5** | **≥6.0** |
| 26.0 | 17.5 | 17.2 | 16.6 | 16.1 | 15.4 | 14.9 | 14.4 | 13.8 | 13.5 | 13.0 | 12.6 | 12.2 | 11.6 |
| 26.2 | 17.8 | 17.4 | 16.9 | 16.4 | 15.7 | 15.1 | 14.6 | 14.0 | 13.7 | 13.2 | 12.8 | 12.4 | 11.8 |
| 26.4 | 18.0 | 17.6 | 17.1 | 16.6 | 15.8 | 15.3 | 14.8 | 14.2 | 13.9 | 13.3 | 13.0 | 12.6 | 12.0 |
| 26.6 | 18.3 | 17.9 | 17.4 | 16.8 | 16.1 | 15.6 | 15.0 | 14.4 | 14.1 | 13.5 | 13.2 | 12.8 | 12.1 |
| 26.8 | 18.6 | 18.2 | 17.7 | 17.1 | 16.4 | 15.8 | 15.3 | 14.6 | 14.3 | 13.8 | 13.4 | 12.9 | 12.3 |
| 27.0 | 18.9 | 18.5 | 18.0 | 17.4 | 16.6 | 16.1 | 15.5 | 14.8 | 14.6 | 14.0 | 13.6 | 13.1 | 12.4 |
| 27.2 | 19.1 | 18.7 | 18.1 | 17.6 | 16.8 | 16.2 | 15.7 | 15.0 | 14.7 | 14.1 | 13.8 | 13.3 | 12.6 |
| 27.4 | 19.4 | 19.0 | 18.4 | 17.8 | 17.0 | 16.4 | 15.9 | 15.2 | 14.9 | 14.3 | 14.0 | 13.4 | 12.7 |
| 27.6 | 19.7 | 19.3 | 18.7 | 18.0 | 17.2 | 16.6 | 16.1 | 15.4 | 15.1 | 14.5 | 14.1 | 13.6 | 12.9 |
| 27.8 | 20.0 | 19.6 | 19.0 | 18.2 | 17.4 | 16.8 | 16.3 | 15.6 | 15.3 | 14.7 | 14.2 | 13.7 | 13.0 |
| 28.0 | 20.3 | 19.7 | 19.2 | 18.4 | 17.6 | 17.0 | 16.5 | 15.8 | 15.4 | 14.8 | 14.4 | 13.9 | 13.2 |
| 28.2 | 20.6 | 20.0 | 19.5 | 18.6 | 17.8 | 17.2 | 16.7 | 16.0 | 15.6 | 15.0 | 14.6 | 14.0 | 13.3 |
| 28.4 | 20.9 | 20.3 | 19.7 | 18.8 | 18.0 | 17.4 | 16.9 | 16.2 | 15.8 | 15.2 | 14.8 | 14.2 | 13.5 |
| 28.6 | 21.2 | 20.6 | 20.0 | 19.1 | 18.2 | 17.6 | 17.1 | 16.4 | 16.0 | 15.4 | 15.0 | 14.3 | 13.6 |
| 28.8 | 21.5 | 20.9 | 20.2 | 19.4 | 18.5 | 17.8 | 17.3 | 16.6 | 16.2 | 15.6 | 15.2 | 14.5 | 13.8 |
| 29.0 | 21.8 | 21.1 | 20.5 | 19.6 | 18.7 | 18.1 | 17.5 | 16.8 | 16.4 | 15.8 | 15.4 | 14.6 | 13.9 |
| 29.2 | 22.1 | 21.4 | 20.8 | 19.9 | 19.0 | 18.3 | 17.7 | 17.0 | 16.6 | 16.0 | 15.6 | 14.8 | 14.1 |
| 29.4 | 22.4 | 21.7 | 21.1 | 20.2 | 19.3 | 18.6 | 17.9 | 17.2 | 16.8 | 16.2 | 15.8 | 15.0 | 14.2 |
| 29.6 | 22.7 | 22.0 | 21.3 | 20.4 | 19.5 | 18.8 | 18.2 | 17.5 | 17.0 | 16.4 | 16.0 | 15.1 | 14.4 |
| 29.8 | 23.0 | 22.3 | 21.6 | 20.7 | 19.8 | 19.1 | 18.4 | 17.7 | 17.2 | 16.6 | 16.2 | 15.3 | 14.5 |
| 30.0 | 23.3 | 22.6 | 21.9 | 21.0 | 20.0 | 19.3 | 18.6 | 17.9 | 17.4 | 16.8 | 16.4 | 15.4 | 14.7 |
| 30.2 | 23.6 | 22.9 | 22.2 | 21.2 | 20.3 | 19.6 | 18.9 | 18.2 | 17.6 | 17.0 | 16.6 | 15.6 | 14.9 |
| 30.4 | 23.9 | 23.2 | 22.5 | 21.5 | 20.6 | 19.8 | 19.1 | 18.4 | 17.8 | 17.2 | 16.8 | 15.8 | 15.1 |
| 30.6 | 24.3 | 23.6 | 22.8 | 21.9 | 20.9 | 20.2 | 19.4 | 18.7 | 18.0 | 17.5 | 17.0 | 16.0 | 15.2 |
| 30.8 | 24.6 | 23.9 | 23.1 | 22.1 | 21.2 | 20.4 | 19.7 | 18.9 | 18.2 | 17.7 | 17.2 | 16.2 | 15.4 |
| 31.0 | 24.9 | 24.2 | 23.4 | 22.4 | 21.4 | 20.7 | 19.9 | 19.2 | 18.4 | 17.9 | 17.4 | 16.4 | 15.5 |
| 31.2 | 25.2 | 24.4 | 23.7 | 22.7 | 21.7 | 20.9 | 20.2 | 19.4 | 18.6 | 18.2 | 17.6 | 16.6 | 15.7 |
| 31.4 | 25.6 | 24.8 | 24.1 | 23.0 | 22.0 | 21.2 | 20.5 | 19.7 | 18.9 | 18.4 | 17.8 | 16.9 | 15.8 |
| 31.6 | 25.9 | 25.1 | 24.3 | 23.3 | 22.3 | 21.5 | 20.7 | 19.9 | 19.2 | 18.6 | 18.0 | 17.1 | 16.0 |
| 31.8 | 26.2 | 25.4 | 24.6 | 23.6 | 22.5 | 21.7 | 21.0 | 20.2 | 19.4 | 18.9 | 18.2 | 17.3 | 16.2 |
| 32.0 | 26.5 | 25.7 | 24.9 | 23.9 | 22.8 | 22.0 | 21.2 | 20.4 | 19.6 | 19.1 | 18.4 | 17.5 | 16.4 |
| 32.2 | 26.9 | 26.1 | 25.3 | 24.2 | 23.1 | 22.3 | 21.5 | 20.7 | 19.9 | 19.4 | 18.6 | 17.7 | 16.6 |
| 32.4 | 27.2 | 26.4 | 25.6 | 24.5 | 23.4 | 22.6 | 21.8 | 20.9 | 20.1 | 19.6 | 18.8 | 17.9 | 16.8 |
| 32.6 | 27.6 | 26.8 | 25.9 | 24.8 | 23.7 | 22.9 | 22.1 | 21.3 | 20.4 | 19.9 | 19.0 | 18.1 | 17.0 |
| 32.8 | 27.9 | 27.1 | 26.2 | 25.1 | 24.0 | 23.2 | 22.3 | 21.5 | 20.6 | 20.1 | 19.2 | 18.3 | 17.2 |
| 33.0 | 28.2 | 27.4 | 26.5 | 25.4 | 24.3 | 23.4 | 22.6 | 21.7 | 20.9 | 20.3 | 19.4 | 18.5 | 17.4 |
| 33.2 | 28.6 | 27.7 | 26.8 | 25.7 | 24.6 | 23.7 | 22.9 | 22.0 | 21.2 | 20.5 | 19.6 | 18.7 | 17.6 |
| 33.4 | 28.9 | 28.0 | 27.1 | 26.0 | 24.9 | 24.0 | 23.1 | 22.3 | 21.4 | 20.7 | 19.8 | 18.9 | 17.8 |
| 33.6 | 29.3 | 28.4 | 27.4 | 26.4 | 25.2 | 24.2 | 23.3 | 22.6 | 21.7 | 20.9 | 20.0 | 19.1 | 18.0 |
| 33.8 | 29.6 | 28.7 | 27.7 | 26.6 | 25.4 | 24.4 | 23.5 | 22.8 | 21.9 | 21.1 | 20.2 | 19.3 | 18.2 |
| 34.0 | 30.0 | 29.1 | 28.0 | 26.8 | 25.6 | 24.6 | 23.7 | 23.0 | 22.1 | 21.3 | 20.4 | 19.5 | 18.3 |
| 34.2 | 30.3 | 29.4 | 28.3 | 27.0 | 25.8 | 24.8 | 23.9 | 23.2 | 22.3 | 21.5 | 20.6 | 19.7 | 18.4 |
| 34.4 | 30.7 | 29.8 | 28.6 | 27.2 | 26.0 | 25.0 | 24.1 | 23.4 | 22.5 | 21.7 | 20.8 | 19.8 | 18.6 |
| 34.6 | 31.1 | 30.2 | 28.9 | 27.4 | 26.2 | 25.2 | 24.3 | 23.6 | 22.7 | 21.9 | 21.0 | 20.0 | 18.8 |
| 34.8 | 31.4 | 30.5 | 29.2 | 27.6 | 26.4 | 25.4 | 24.5 | 23.8 | 22.9 | 22.1 | 21.2 | 20.2 | 19.0 |
| 35.0 | 31.8 | 30.8 | 29.6 | 28.0 | 26.7 | 25.8 | 24.8 | 24.0 | 23.2 | 22.3 | 21.4 | 20.4 | 19.2 |
| 35.2 | 32.1 | 31.1 | 29.9 | 28.2 | 27.0 | 26.0 | 25.0 | 24.2 | 23.4 | 22.5 | 21.6 | 20.6 | 19.4 |
| 35.4 | 32.5 | 31.5 | 30.2 | 28.6 | 27.3 | 26.3 | 25.4 | 24.4 | 23.7 | 22.8 | 21.8 | 20.8 | 19.6 |
| 35.6 | 32.9 | 31.9 | 30.6 | 29.0 | 27.6 | 26.6 | 25.7 | 24.7 | 24.0 | 23.0 | 22.0 | 21.0 | 19.8 |
| 35.8 | 33.3 | 32.3 | 31.0 | 29.3 | 28.0 | 27.0 | 26.0 | 25.0 | 24.3 | 23.3 | 22.2 | 21.2 | 20.0 |
| 36.0 | 33.6 | 32.6 | 31.2 | 29.6 | 28.2 | 27.2 | 26.2 | 25.2 | 24.5 | 23.5 | 22.4 | 21.4 | 20.2 |
| 36.2 | 34.0 | 33.0 | 31.6 | 29.9 | 28.6 | 27.5 | 26.5 | 25.5 | 24.8 | 23.8 | 22.6 | 21.6 | 20.4 |
| 36.4 | 34.4 | 33.4 | 32.0 | 30.3 | 28.9 | 27.9 | 26.8 | 25.8 | 25.1 | 24.1 | 22.8 | 21.8 | 20.6 |
| 36.6 | 34.8 | 33.8 | 32.4 | 30.6 | 29.2 | 28.2 | 27.1 | 26.1 | 25.4 | 24.4 | 23.0 | 22.0 | 20.9 |
| 36.8 | 35.2 | 34.1 | 32.7 | 31.0 | 29.6 | 28.5 | 27.5 | 26.4 | 25.7 | 24.6 | 23.2 | 22.2 | 21.1 |
| 37.0 | 35.5 | 34.4 | 33.0 | 31.2 | 29.8 | 28.8 | 27.7 | 26.6 | 25.9 | 24.8 | 23.4 | 22.4 | 21.3 |
| 37.2 | 35.9 | 34.8 | 33.4 | 31.6 | 30.2 | 29.1 | 28.0 | 26.9 | 26.2 | 25.1 | 23.7 | 22.6 | 21.5 |
| 37.4 | 36.3 | 35.2 | 33.8 | 31.9 | 30.5 | 29.4 | 28.3 | 27.2 | 26.6 | 25.4 | 24.0 | 22.9 | 21.8 |
| 37.6 | 36.7 | 35.6 | 34.1 | 32.3 | 30.8 | 29.7 | 28.6 | 27.5 | 26.8 | 25.7 | 24.2 | 23.1 | 22.0 |
| 37.8 | 37.1 | 36.0 | 34.5 | 32.6 | 31.2 | 30.0 | 28.9 | 27.8 | 27.1 | 26.0 | 24.5 | 23.4 | 22.3 |
| 38.0 | 37.5 | 36.4 | 34.9 | 33.0 | 31.5 | 30.3 | 29.2 | 28.1 | 27.4 | 26.2 | 24.8 | 23.6 | 22.5 |
| 38.2 | 37.9 | 36.8 | 35.2 | 33.4 | 31.8 | 30.6 | 29.5 | 28.4 | 27.7 | 26.5 | 25.0 | 23.9 | 22.7 |
| 38.4 | 38.3 | 37.2 | 35.6 | 33.7 | 32.1 | 30.9 | 29.8 | 28.7 | 28.0 | 26.8 | 25.3 | 24.1 | 23.0 |
| 38.6 | 38.7 | 37.5 | 36.0 | 34.1 | 32.4 | 31.2 | 30.1 | 29.0 | 28.3 | 27.0 | 25.5 | 24.4 | 23.2 |
| 38.8 | 39.1 | 37.9 | 36.4 | 34.4 | 32.7 | 31.5 | 30.4 | 29.3 | 28.5 | 27.2 | 25.8 | 24.6 | 23.5 |
| 39.0 | 39.5 | 38.2 | 36.7 | 34.7 | 33.0 | 31.8 | 30.6 | 29.6 | 28.8 | 27.4 | 26.0 | 24.8 | 23.7 |
| 39.2 | 39.9 | 38.5 | 37.0 | 35.0 | 33.3 | 32.1 | 30.8 | 29.8 | 29.0 | 27.6 | 26.2 | 25.0 | 24.0 |
| 39.4 | 40.3 | 38.8 | 37.3 | 35.3 | 33.6 | 32.4 | 31.0 | 30.0 | 29.2 | 27.8 | 26.4 | 25.2 | 24.2 |
| 39.6 | 40.7 | 39.1 | 37.6 | 35.6 | 33.9 | 32.7 | 31.2 | 30.2 | 29.4 | 28.0 | 26.6 | 25.4 | 24.4 |
| 39.8 | 41.2 | 39.6 | 38.0 | 35.9 | 34.2 | 33.0 | 31.4 | 30.5 | 29.7 | 28.2 | 26.8 | 25.6 | 24.7 |
| 40.0 | 41.6 | 39.9 | 38.3 | 36.2 | 34.5 | 33.3 | 31.7 | 30.8 | 30.0 | 28.4 | 27.0 | 25.8 | 25.0 |
| 40.2 | 42.0 | 40.3 | 38.6 | 36.5 | 34.8 | 33.6 | 32.0 | 31.1 | 30.2 | 28.6 | 27.3 | 26.0 | 25.2 |
| 40.4 | 42.4 | 40.7 | 39.0 | 36.9 | 35.1 | 33.9 | 32.3 | 31.4 | 30.5 | 28.8 | 27.6 | 26.2 | 25.4 |
| 40.6 | 42.8 | 41.1 | 39.4 | 37.2 | 35.4 | 34.2 | 32.6 | 31.7 | 30.8 | 29.1 | 27.8 | 26.5 | 25.7 |
| 40.8 | 43.3 | 41.6 | 39.8 | 37.7 | 35.7 | 34.5 | 32.9 | 32.0 | 31.2 | 29.4 | 28.1 | 26.8 | 26.0 |
| 41.0 | 43.7 | 42.0 | 40.2 | 38.0 | 36.0 | 34.8 | 33.2 | 32.3 | 31.5 | 29.7 | 28.4 | 27.1 | 26.2 |
| 41.2 | 44.1 | 42.3 | 40.6 | 38.4 | 36.3 | 35.1 | 33.5 | 32.6 | 31.8 | 30.0 | 28.7 | 27.3 | 26.5 |
| 41.4 | 44.5 | 42.7 | 40.9 | 38.7 | 36.6 | 35.4 | 33.8 | 32.9 | 32.0 | 30.3 | 28.9 | 27.6 | 26.7 |
| 41.6 | 45.0 | 43.2 | 41.4 | 39.2 | 36.9 | 35.7 | 34.2 | 33.3 | 32.4 | 30.6 | 29.2 | 27.9 | 27.0 |
| 41.8 | 45.4 | 43.6 | 41.8 | 39.5 | 37.2 | 36.0 | 34.5 | 33.6 | 32.7 | 30.9 | 29.5 | 28.1 | 27.2 |
| 42.0 | 45.9 | 44.1 | 42.2 | 39.9 | 37.6 | 36.3 | 34.9 | 34.0 | 33.0 | 31.2 | 29.8 | 28.5 | 27.5 |
| 42.2 | 46.3 | 44.4 | 42.6 | 40.3 | 38.0 | 36.6 | 35.2 | 34.3 | 33.3 | 31.5 | 30.1 | 28.7 | 27.8 |
| 42.4 | 46.7 | 44.8 | 43.0 | 40.6 | 38.3 | 36.9 | 35.5 | 34.6 | 33.6 | 31.8 | 30.4 | 29.0 | 28.0 |
| 42.6 | 47.2 | 45.3 | 43.4 | 41.1 | 38.7 | 37.3 | 35.9 | 34.9 | 34.0 | 32.1 | 30.7 | 29.3 | 28.3 |
| 42.8 | 47.6 | 45.7 | 43.8 | 41.4 | 39.0 | 37.6 | 36.2 | 35.2 | 34.3 | 32.4 | 30.9 | 29.5 | 28.6 |
| 43.0 | 48.1 | 46.2 | 44.2 | 41.8 | 39.4 | 38.0 | 36.6 | 35.6 | 34.6 | 32.7 | 31.3 | 29.8 | 28.9 |
| 43.2 | 48.5 | 46.6 | 44.6 | 42.2 | 39.8 | 38.3 | 36.9 | 35.9 | 34.9 | 33.0 | 31.5 | 30.1 | 29.1 |
| 43.4 | 49.0 | 47.0 | 45.1 | 42.6 | 40.2 | 38.7 | 37.2 | 36.3 | 35.3 | 33.3 | 31.8 | 30.4 | 29.4 |
| 43.6 | 49.4 | 47.4 | 45.4 | 43.0 | 40.5 | 39.0 | 37.5 | 36.6 | 35.6 | 33.6 | 32.1 | 30.6 | 29.6 |
| 43.8 | 49.9 | 47.9 | 45.9 | 43.4 | 40.9 | 39.4 | 37.9 | 36.9 | 35.9 | 33.9 | 32.4 | 30.9 | 29.9 |
| 44.0 | 50.4 | 48.4 | 46.4 | 43.8 | 41.3 | 39.8 | 38.3 | 37.3 | 36.3 | 34.3 | 32.8 | 31.2 | 30.2 |
| 44.2 | 50.8 | 48.8 | 46.7 | 44.2 | 41.7 | 40.1 | 38.6 | 37.6 | 36.6 | 34.5 | 33.0 | 31.5 | 30.5 |
| 44.4 | 51.3 | 49.2 | 47.2 | 44.6 | 42.1 | 40.5 | 39.0 | 38.0 | 36.9 | 34.9 | 33.3 | 31.8 | 30.8 |
| 44.6 | 51.7 | 49.6 | 47.6 | 45.0 | 42.4 | 40.8 | 39.3 | 38.3 | 37.2 | 35.2 | 33.6 | 32.1 | 31.0 |
| 44.8 | 52.2 | 50.1 | 48.0 | 45.4 | 42.8 | 41.2 | 39.7 | 38.6 | 37.6 | 35.5 | 33.9 | 32.4 | 31.3 |
| 45.0 | 52.7 | 50.6 | 48.5 | 45.8 | 43.2 | 41.6 | 40.1 | 39.0 | 37.9 | 35.8 | 34.3 | 32.7 | 31.6 |
| 45.2 | 53.2 | 51.1 | 48.9 | 46.3 | 43.6 | 42.0 | 40.4 | 39.4 | 38.3 | 36.2 | 34.6 | 33.0 | 31.9 |
| 45.4 | 53.6 | 51.5 | 49.4 | 46.6 | 44.0 | 42.3 | 40.7 | 39.7 | 38.6 | 36.4 | 34.8 | 33.2 | 32.2 |
| 45.6 | 54.1 | 51.9 | 49.8 | 47.1 | 44.4 | 42.7 | 41.1 | 40.0 | 39.0 | 36.8 | 35.2 | 33.5 | 32.5 |
| 45.8 | 54.6 | 52.4 | 50.2 | 47.5 | 44.8 | 43.1 | 41.5 | 40.4 | 39.3 | 37.1 | 35.5 | 33.9 | 32.8 |
| 46.0 | 55.0 | 52.8 | 50.6 | 47.9 | 45.2 | 43.5 | 41.9 | 40.8 | 39.7 | 37.5 | 35.8 | 34.2 | 33.1 |
| 46.2 | 55.5 | 53.3 | 51.1 | 48.3 | 45.5 | 43.8 | 42.2 | 41.1 | 40.0 | 37.7 | 36.1 | 34.4 | 33.3 |
| 46.4 | 56.0 | 53.8 | 51.5 | 48.7 | 45.9 | 44.2 | 42.6 | 41.4 | 40.3 | 38.1 | 36.4 | 34.7 | 33.6 |
| 46.6 | 56.5 | 54.2 | 52.0 | 49.2 | 46.3 | 44.6 | 42.9 | 41.8 | 40.7 | 38.4 | 36.7 | 35.0 | 33.9 |
| 46.8 | 57.0 | 54.7 | 52.4 | 49.6 | 46.7 | 45.0 | 43.3 | 42.2 | 41.0 | 38.8 | 37.0 | 35.3 | 34.2 |
| 47.0 | 57.5 | 55.2 | 52.9 | 50.0 | 47.2 | 45.2 | 43.7 | 42.6 | 41.4 | 39.1 | 37.4 | 35.6 | 34.5 |
| 47.2 | 58.0 | 55.7 | 53.4 | 50.5 | 47.6 | 45.8 | 44.1 | 42.9 | 41.8 | 39.4 | 37.7 | 36.0 | 34.8 |
| 47.4 | 58.5 | 56.2 | 53.8 | 50.9 | 48.0 | 46.2 | 44.5 | 43.3 | 42.1 | 39.8 | 38.0 | 36.3 | 35.1 |
| 47.6 | 59.0 | 56.6 | 54.3 | 51.3 | 48.4 | 46.6 | 44.8 | 43.7 | 42.5 | 40.1 | 38.4 | 36.6 | 35.4 |
| 47.8 | 59.5 | 57.1 | 54.7 | 51.8 | 48.8 | 47.0 | 45.2 | 44.0 | 42.8 | 40.5 | 38.7 | 36.9 | 35.7 |
| 48.0 | 60.0 | 57.6 | 55.2 | 52.2 | 49.2 | 47.4 | 45.6 | 44.4 | 43.2 | 40.8 | 39.0 | 37.2 | 36.0 |
| 48.2 | — | 58.0 | 55.7 | 52.6 | 49.6 | 47.8 | 46.0 | 44.8 | 43.6 | 41.1 | 39.3 | 37.5 | 36.3 |
| 48.4 | — | 58.6 | 56.1 | 53.1 | 50.0 | 48.2 | 46.4 | 45.1 | 43.9 | 41.5 | 39.6 | 37.8 | 36.6 |
| 48.6 | — | 59.0 | 56.6 | 53.5 | 50.4 | 48.6 | 46.7 | 45.5 | 44.3 | 41.8 | 40.0 | 38.1 | 36.9 |
| 48.8 | — | 59.5 | 57.1 | 54.0 | 50.9 | 49.0 | 47.1 | 45.9 | 44.6 | 42.2 | 40.3 | 38.4 | 37.2 |
| 49.0 | — | 60.0 | 57.5 | 54.4 | 51.3 | 49.4 | 47.5 | 46.2 | 45.0 | 42.5 | 40.6 | 38.8 | 37.5 |
| 49.2 | — | — | 58.0 | 54.8 | 51.7 | 49.8 | 47.9 | 46.6 | 45.4 | 42.8 | 41.0 | 39.1 | 37.8 |
| 49.4 | — | — | 58.5 | 55.3 | 52.1 | 50.2 | 48.3 | 47.1 | 45.8 | 43.2 | 41.3 | 39.4 | 38.2 |
| 49.6 | — | — | 58.9 | 55.7 | 52.5 | 50.6 | 48.7 | 47.4 | 46.2 | 43.6 | 41.7 | 39.7 | 38.5 |
| 49.8 | — | — | 59.4 | 56.2 | 53.0 | 51.0 | 49.1 | 47.8 | 46.5 | 43.9 | 42.0 | 40.1 | 38.8 |
| 50.0 | — | — | 59.9 | 56.7 | 53.4 | 51.4 | 49.5 | 48.2 | 46.9 | 44.3 | 42.3 | 40.4 | 39.1 |
| 50.2 | — | — | 60.0 | 57.1 | 53.8 | 51.9 | 49.9 | 48.5 | 47.2 | 44.6 | 42.6 | 40.7 | 39.4 |
| 50.4 | — | — | — | 57.6 | 54.3 | 52.3 | 50.3 | 49.0 | 47.7 | 45.0 | 43.0 | 41.0 | 39.7 |
| 50.6 | — | — | — | 58.0 | 54.7 | 52.7 | 50.7 | 49.4 | 48.0 | 45.4 | 43.4 | 41.4 | 40.0 |
| 50.8 | — | — | — | 58.5 | 55.1 | 53.1 | 51.1 | 49.8 | 48.4 | 45.7 | 43.7 | 41.7 | 40.3 |
| 51.0 | — | — | — | 59.0 | 55.6 | 53.5 | 51.5 | 50.1 | 48.8 | 46.1 | 44.1 | 42.0 | 40.7 |
| 51.2 | — | — | — | 59.4 | 56.0 | 54.0 | 51.9 | 50.5 | 49.2 | 46.4 | 44.4 | 42.3 | 41.0 |
| 51.4 | — | — | — | 59.9 | 56.4 | 54.4 | 52.3 | 50.9 | 49.6 | 46.8 | 44.7 | 42.7 | 41.3 |
| 51.6 | — | — | — | 60.0 | 56.9 | 54.8 | 52.7 | 51.3 | 50.0 | 47.2 | 45.1 | 43.0 | 41.6 |
| 51.8 | — | — | — | — | 57.3 | 55.2 | 53.1 | 51.7 | 50.3 | 47.5 | 45.4 | 43.3 | 41.8 |
| 52.0 | — | — | — | — | 57.8 | 55.7 | 53.6 | 52.1 | 50.7 | 47.9 | 45.8 | 43.7 | 42.3 |
| 52.2 | — | — | — | — | 58.2 | 56.1 | 54.0 | 52.5 | 51.1 | 48.3 | 46.2 | 44.0 | 42.6 |
| 52.4 | — | — | — | — | 58.7 | 56.5 | 54.4 | 53.0 | 51.5 | 48.7 | 46.5 | 44.4 | 43.0 |
| 52.6 | — | — | — | — | 59.1 | 57.0 | 54.8 | 53.4 | 51.9 | 49.0 | 46.9 | 44.7 | 43.3 |
| 52.8 | — | — | — | — | 59.6 | 57.4 | 55.2 | 53.8 | 52.3 | 49.4 | 47.3 | 45.1 | 43.6 |
| 53.0 | — | — | — | — | 60.0 | 57.8 | 55.6 | 54.2 | 52.7 | 49.8 | 47.6 | 45.4 | 43.9 |
| 53.2 | — | — | — | — | — | 58.3 | 56.1 | 54.6 | 53.1 | 50.2 | 48.0 | 45.8 | 44.3 |
| 53.4 | — | — | — | — | — | 58.7 | 56.5 | 55.0 | 53.5 | 50.5 | 48.3 | 46.1 | 44.6 |
| 53.6 | — | — | — | — | — | 59.2 | 56.9 | 55.4 | 53.9 | 50.9 | 48.7 | 46.4 | 44.9 |
| 53.8 | — | — | — | — | — | 59.6 | 57.3 | 55.8 | 54.3 | 51.3 | 49.0 | 46.8 | 45.3 |
| 54.0 | — | — | — | — | — | 60.0 | 57.8 | 56.3 | 54.7 | 51.7 | 49.4 | 47.1 | 45.6 |
| 54.2 | — | — | — | — | — | — | 58.2 | 56.7 | 55.1 | 52.1 | 49.8 | 47.5 | 46.0 |
| 54.4 | — | — | — | — | — | — | 58.6 | 57.1 | 55.6 | 52.5 | 50.2 | 47.9 | 46.3 |
| 54.6 | — | — | — | — | — | — | 59.1 | 57.5 | 56.0 | 52.9 | 50.5 | 48.2 | 46.6 |
| 54.8 | — | — | — | — | — | — | 59.5 | 57.9 | 56.4 | 53.2 | 50.9 | 48.5 | 47.0 |
| 55.0 | — | — | — | — | — | — | 59.9 | 58.4 | 56.8 | 53.6 | 51.3 | 48.9 | 47.3 |
| 55.2 | — | — | — | — | — | — | 60.0 | 58.8 | 57.2 | 54.0 | 51.6 | 49.3 | 47.7 |
| 55.4 | — | — | — | — | — | — | — | 59.2 | 57.6 | 54.4 | 52.0 | 49.6 | 48.0 |
| 55.6 | — | — | — | — | — | — | — | 59.7 | 58.0 | 54.8 | 52.4 | 50.0 | 48.4 |
| 55.8 | — | — | — | — | — | — | — | 60.0 | 58.5 | 55.2 | 52.8 | 50.3 | 48.7 |
| 56.0 | — | — | — | — | — | — | — | — | 58.9 | 55.6 | 53.2 | 50.7 | 49.1 |
| 56.2 | — | — | — | — | — | — | — | — | 59.3 | 56.0 | 53.5 | 51.1 | 49.4 |
| 56.4 | — | — | — | — | — | — | — | — | 59.7 | 56.4 | 53.9 | 51.4 | 49.8 |
| 56.6 | — | — | — | — | — | — | — | — | 60.0 | 56.8 | 54.3 | 51.8 | 50.1 |
| 56.8 | — | — | — | — | — | — | — | — | — | 57.2 | 54.7 | 52.2 | 50.5 |
| 57.0 | — | — | — | — | — | — | — | — | — | 57.6 | 55.1 | 52.5 | 50.8 |
| 57.2 | — | — | — | — | — | — | — | — | — | 58.0 | 55.5 | 52.9 | 51.2 |
| 57.4 | — | — | — | — | — | — | — | — | — | 58.4 | 55.9 | 53.3 | 51.6 |
| 57.6 | — | — | — | — | — | — | — | — | — | 58.9 | 56.3 | 53.7 | 51.9 |
| 57.8 | — | — | — | — | — | — | — | — | — | 59.3 | 56.7 | 54.0 | 52.3 |
| 58.0 | — | — | — | — | — | — | — | — | — | 59.7 | 57.0 | 54.4 | 52.7 |
| 58.2 | — | — | — | — | — | — | — | — | — | 60.0 | 57.4 | 54.8 | 53.0 |
| 58.4 | — | — | — | — | — | — | — | — | — | — | 57.8 | 55.2 | 53.4 |
| 58.6 | — | — | — | — | — | — | — | — | — | — | 58.2 | 55.6 | 53.8 |
| 58.8 | — | — | — | — | — | — | — | — | — | — | 58.6 | 55.9 | 54.1 |
| 59.0 | — | — | — | — | — | — | — | — | — | — | 59.0 | 56.3 | 54.5 |
| 59.2 | — | — | — | — | — | — | — | — | — | — | 59.4 | 56.7 | 54.9 |
| 59.4 | — | — | — | — | — | — | — | — | — | — | 59.8 | 57.1 | 55.2 |
| 59.6 | — | — | — | — | — | — | — | — | — | — | 60.0 | 57.5 | 55.6 |
| 59.8 | — | — | — | — | — | — | — | — | — | — | — | 57.9 | 56.0 |
| 60.0 | — | — | — | — | — | — | — | — | — | — | — | 58.3 | 56.4 |

注:表中未注明的测区混凝土强度换算值为小于10 MPa或大于60MPa。

# 附录B 非水平方向检测时的回弹值修正值

**表B 非水平方向检测时的回弹值修正值**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **检 测 角 度** | | | | | | | |
| **向 上** | | | | **向 下** | | | |
| **90°** | **60°** | **45°** | **30°** | **-30°** | **-45°** | **-60°** | **-90°** |
| 20 | -6.0 | -5.0 | -4.0 | -3.0 | +2.5 | +3.0 | +3.5 | +4.0 |
| 21 | -5.9 | -4.9 | -4.0 | -3.0 | +2.5 | +3.0 | +3.5 | +4.0 |
| 22 | -5.8 | -4.8 | -3.9 | -2.9 | +2.4 | +2.9 | +3.4 | +3.9 |
| 23 | -5.7 | -4.7 | -3.9 | -2.9 | +2.4 | +2.9 | +3.4 | +3.9 |
| 24 | -5.6 | -4.6 | -3.8 | -2.8 | +2.3 | +2.8 | +3.3 | +3.8 |
| 25 | -5.5 | -4.5 | -3.8 | -2.8 | +2.3 | +2.8 | +3.3 | +3.8 |
| 26 | -5.4 | -4.4 | -3.7 | -2.7 | +2.2 | +2.7 | +3.2 | +3.7 |
| 27 | -5.3 | -4.3 | -3.7 | -2.7 | +2.2 | +2.7 | +3.2 | +3.7 |
| 28 | -5.2 | -4.2 | -3.6 | -2.6 | +2.1 | +2.6 | +3.1 | +3.6 |
| 29 | -5.1 | -4.1 | -3.6 | -2.6 | +2.1 | +2.6 | +3.1 | +3.6 |
| 30 | -5.0 | -4.0 | -3.5 | -2.5 | +2.0 | +2.5 | +3.0 | +3.5 |
| 31 | -4.9 | -4.0 | -3.5 | -2.5 | +2.0 | +2.5 | +3.0 | +3.5 |
| 32 | -4.8 | -3.9 | -3.4 | -2.4 | +1.9 | +2.4 | +2.9 | +3.4 |
| 33 | -4.7 | -3.9 | -3.4 | -2.4 | +1.9 | +2.4 | +2.9 | +3.4 |
| 34 | -4.6 | -3.8 | -3.3 | -2.3 | +1.8 | +2.3 | +2.8 | +3.3 |
| 35 | -4.5 | -3.8 | -3.3 | -2.3 | +1.8 | +2.3 | +2.8 | +3.3 |
| 36 | -4.4 | -3.7 | -3.2 | -2.2 | +1.7 | +2.2 | +2.7 | +3.2 |
| 37 | -4.3 | -3.7 | -3.2 | -2.2 | +1.7 | +2.2 | +2.7 | +3.2 |
| 38 | -4.2 | -3.6 | -3.1 | -2.1 | +1.6 | +2.1 | +2.6 | +3.1 |
| 39 | -4.1 | -3.6 | -3.1 | -2.1 | +1.6 | +2.1 | +2.6 | +3.1 |
| 40 | -4.0 | -3.5 | -3.0 | -2.0 | +1.5 | +2.0 | +2.5 | +3.0 |
| 41 | -4.0 | -3.5 | -3.0 | -2.0 | +1.5 | +2.0 | +2.5 | +3.0 |
| 42 | -3.9 | -3.4 | -2.9 | -1.9 | +1.4 | +1.9 | +2.4 | +2.9 |
| 43 | -3.9 | -3.4 | -2.9 | -1.9 | +1.4 | +1.9 | +2.4 | +2.9 |
| 44 | -3.8 | -3.3 | -2.8 | -1.8 | +1.3 | +1.8 | +2.3 | +2.8 |
| 45 | -3.8 | -3.3 | -2.8 | -1.8 | +1.3 | +1.8 | +2.3 | +2.8 |
| 46 | -3.7 | -3.2 | -2.7 | -1.7 | +1.2 | +1.7 | +2.2 | +2.7 |
| 47 | -3.7 | -3.2 | -2.7 | -1.7 | +1.2 | +1.7 | +2.2 | +2.7 |
| 48 | -3.6 | -3.1 | -2.6 | -1.6 | +1.1 | +1.6 | +2.1 | +2.6 |
| 49 | -3.6 | -3.1 | -2.6 | -1.6 | +1.1 | +1.6 | +2.1 | +2.6 |
| 50 | -3.5 | -3.0 | -2.5 | -1.5 | +1.0 | +1.5 | +2.0 | +2.5 |

注：1 小于20或大于50时，分别按20或50查表；



2 表中未列入的相应于的修正值，可用内插法求得，精确至0.1。



# 附录C 不同浇筑面的回弹值修正值

**表C 不同浇筑面的回弹值修正值**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **或** | **表面修正值**  **（）** | **底面修正值（）** | **或** | **表面修正值（）** | **底面修正值（）** |
| 20 | +2.5 | -3.0 | 36 | +0.9 | -1.4 |
| 21 | +2.4 | -2.9 | 37 | +0.8 | -1.3 |
| 22 | +2.3 | -2.8 | 38 | +0.7 | -1.2 |
| 23 | +2.2 | -2.7 | 39 | +0.6 | -1.1 |
| 24 | +2.1 | -2.6 | 40 | +0.5 | -1.0 |
| 25 | +2.0 | -2.5 | 41 | +0.4 | -0.9 |
| 26 | +1.9 | -2.4 | 42 | +0.3 | -0.8 |
| 27 | +1.8 | -2.3 | 43 | +0.2 | -0.7 |
| 28 | +1.7 | -2.2 | 44 | +0.1 | -0.6 |
| 29 | +1.6 | -2.1 | 45 | 0 | -0.5 |
| 30 | +1.5 | -2.0 | 46 | 0 | -0.4 |
| 31 | +1.4 | -1.9 | 47 | 0 | -0.3 |
| 32 | +1.3 | -1.8 | 48 | 0 | -0.2 |
| 33 | +1.2 | -1.7 | 49 | 0 | -0.1 |
| 34 | +1.1 | -1.6 | 50 | 0 | 0 |
| 35 | +1.0 | -1.5 | — | — | — |

注：1 或小于20或大于50时，分别按20或50查表；



2 表中有关混凝土浇筑表面的修正系数，是指一般原浆抹面的修正值；

3 表中有关混凝土浇筑底面的修正系数，是指构件底面与侧面采用同一类模板在正常浇筑情况下的修正值；

4 表中未列入相应于或的和，可用内插法求得，精确至0.1。



# 附录D 泵送混凝土底面向上测区强度换算表

| **表D 泵送混凝土底面向上测区强度换算表** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **平均回弹**  **值Rm** | **测区混凝土强度换算值 （MPa）** | | | | | | | | | | | | |
| **平均碳化深度值dm（mm）** | | | | | | | | | | | | |
| **0.0** | **0.5** | **1.0** | **1.5** | **2.0** | **2.5** | **3.0** | **3.5** | **4.0** | **4.5** | **5.0** | **5.5** | **≥6** |
| 20.8 | 10.1 | — | — | — | — | — | — | — | — | — | — | — | — |
| 21.0 | 10.3 | 10.0 | — | — | — | — | — | — | — | — | — | — | — |
| 21.2 | 10.5 | 10.2 | 9.9 | — | — | — | — | — | — | — | — | — | — |
| 21.4 | 10.7 | 10.4 | 10.1 | 9.9 | — | — | — | — | — | — | — | — | — |
| 21.6 | 10.9 | 10.6 | 10.3 | 10.1 | — | — | — | — | — | — | — | — | — |
| 21.8 | 11.1 | 10.8 | 10.5 | 10.2 | 10.0 | — | — | — | — | — | — | — | — |
| 22.0 | 11.3 | 11.0 | 10.7 | 10.4 | 10.2 | 9.9 | — | — | — | — | — | — | — |
| 22.2 | 11.5 | 11.2 | 10.9 | 10.6 | 10.3 | 10.1 | — | — | — | — | — | — | — |
| 22.4 | 11.7 | 11.4 | 11.1 | 10.8 | 10.5 | 10.3 | 10.0 | — | — | — | — | — | — |
| 22.6 | 11.9 | 11.6 | 11.3 | 11.0 | 10.7 | 10.4 | 10.2 | 9.9 | — | — | — | — | — |
| 22.8 | 12.1 | 11.8 | 11.5 | 11.2 | 10.9 | 10.6 | 10.4 | 10.1 | — | — | — | — | — |
| 23.0 | 12.3 | 12.0 | 11.7 | 11.4 | 11.1 | 10.8 | 10.5 | 10.3 | 10.0 | — | — | — | — |
| 23.2 | 12.5 | 12.2 | 11.9 | 11.6 | 11.3 | 11.0 | 10.7 | 10.5 | 10.2 | 9.9 | — | — | — |
| 23.4 | 12.7 | 12.4 | 12.1 | 11.8 | 11.5 | 11.2 | 10.9 | 10.6 | 10.4 | 10.1 | — | — | — |
| 23.6 | 12.9 | 12.6 | 12.3 | 12.0 | 11.7 | 11.4 | 11.1 | 10.8 | 10.5 | 10.3 | 10.0 | — | — |
| 23.8 | 13.2 | 12.8 | 12.5 | 12.2 | 11.9 | 11.6 | 11.3 | 11.0 | 10.7 | 10.4 | 10.2 | 9.9 | — |
| 24.0 | 13.4 | 13.0 | 12.7 | 12.4 | 12.1 | 11.8 | 11.5 | 11.2 | 10.9 | 10.6 | 10.3 | 10.1 | — |
| 24.2 | 13.6 | 13.3 | 12.9 | 12.6 | 12.3 | 12.0 | 11.7 | 11.4 | 11.1 | 10.8 | 10.5 | 10.3 | 10.0 |
| 24.4 | 13.8 | 13.5 | 13.1 | 12.8 | 12.5 | 12.2 | 11.9 | 11.6 | 11.3 | 11.0 | 10.7 | 10.4 | 10.2 |
| 24.6 | 14.1 | 13.7 | 13.3 | 13.0 | 12.7 | 12.4 | 12.0 | 11.7 | 11.4 | 11.2 | 10.9 | 10.6 | 10.3 |
| 24.8 | 14.3 | 13.9 | 13.6 | 13.2 | 12.9 | 12.6 | 12.2 | 11.9 | 11.6 | 11.3 | 11.0 | 10.8 | 10.5 |
| 25.0 | 14.5 | 14.1 | 13.8 | 13.4 | 13.1 | 12.8 | 12.4 | 12.1 | 11.8 | 11.5 | 11.2 | 10.9 | 10.7 |
| 25.2 | 14.7 | 14.4 | 14.0 | 13.6 | 13.3 | 13.0 | 12.6 | 12.3 | 12.0 | 11.7 | 11.4 | 11.1 | 10.8 |
| 25.4 | 15.0 | 14.6 | 14.2 | 13.9 | 13.5 | 13.2 | 12.8 | 12.5 | 12.2 | 11.9 | 11.6 | 11.3 | 11.0 |
| 25.6 | 15.2 | 14.8 | 14.4 | 14.1 | 13.7 | 13.4 | 13.0 | 12.7 | 12.4 | 12.1 | 11.8 | 11.5 | 11.2 |
| 25.8 | 15.4 | 15.1 | 14.7 | 14.3 | 13.9 | 13.6 | 13.2 | 12.9 | 12.6 | 12.3 | 11.9 | 11.6 | 11.3 |
| 26.0 | 15.7 | 15.3 | 14.9 | 14.5 | 14.2 | 13.8 | 13.4 | 13.1 | 12.8 | 12.4 | 12.1 | 11.8 | 11.5 |
| 26.2 | 15.9 | 15.5 | 15.1 | 14.7 | 14.4 | 14.0 | 13.6 | 13.3 | 13.0 | 12.6 | 12.3 | 12.0 | 11.7 |
| 26.4 | 16.2 | 15.8 | 15.4 | 15.0 | 14.6 | 14.2 | 13.9 | 13.5 | 13.2 | 12.8 | 12.5 | 12.2 | 11.9 |
| 26.6 | 16.4 | 16.0 | 15.6 | 15.2 | 14.8 | 14.4 | 14.1 | 13.7 | 13.4 | 13.0 | 12.7 | 12.4 | 12.1 |

| **续表D** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **平均回弹**  **值Rm** | **测区混凝土强度换算值 （MPa）** | | | | | | | | | | | | |
| **平均碳化深度值dm（mm）** | | | | | | | | | | | | |
| **0.0** | **0.5** | **1.0** | **1.5** | **2.0** | **2.5** | **3.0** | **3.5** | **4.0** | **4.5** | **5.0** | **5.5** | **≥6** |
| 26.8 | 16.7 | 16.2 | 15.8 | 15.4 | 15.0 | 14.6 | 14.3 | 13.9 | 13.6 | 13.2 | 12.9 | 12.6 | 12.2 |
| 27.0 | 16.9 | 16.5 | 16.1 | 15.6 | 15.3 | 14.9 | 14.5 | 14.1 | 13.8 | 13.4 | 13.1 | 12.7 | 12.4 |
| 27.2 | 17.2 | 16.7 | 16.3 | 15.9 | 15.5 | 15.1 | 14.7 | 14.3 | 14.0 | 13.6 | 13.3 | 12.9 | 12.6 |
| 27.4 | 17.4 | 17.0 | 16.5 | 16.1 | 15.7 | 15.3 | 14.9 | 14.5 | 14.2 | 13.8 | 13.5 | 13.1 | 12.8 |
| 27.6 | 17.7 | 17.2 | 16.8 | 16.3 | 15.9 | 15.5 | 15.1 | 14.8 | 14.4 | 14.0 | 13.7 | 13.3 | 13.0 |
| 27.8 | 17.9 | 17.5 | 17.0 | 16.6 | 16.2 | 15.8 | 15.4 | 15.0 | 14.6 | 14.2 | 13.9 | 13.5 | 13.2 |
| 28.0 | 18.2 | 17.7 | 17.3 | 16.8 | 16.4 | 16.0 | 15.6 | 15.2 | 14.8 | 14.4 | 14.1 | 13.7 | 13.3 |
| 28.2 | 18.4 | 18.0 | 17.5 | 17.1 | 16.6 | 16.2 | 15.8 | 15.4 | 15.0 | 14.6 | 14.3 | 13.9 | 13.5 |
| 28.4 | 18.7 | 18.2 | 17.7 | 17.3 | 16.9 | 16.4 | 16.0 | 15.6 | 15.2 | 14.8 | 14.5 | 14.1 | 13.7 |
| 28.6 | 18.9 | 18.5 | 18.0 | 17.5 | 17.1 | 16.7 | 16.2 | 15.8 | 15.4 | 15.0 | 14.7 | 14.3 | 13.9 |
| 28.8 | 19.2 | 18.7 | 18.2 | 17.8 | 17.3 | 16.9 | 16.5 | 16.1 | 15.6 | 15.2 | 14.9 | 14.5 | 14.1 |
| 29.0 | 19.5 | 19.0 | 18.5 | 18.0 | 17.6 | 17.1 | 16.7 | 16.3 | 15.9 | 15.5 | 15.1 | 14.7 | 14.3 |
| 29.2 | 19.7 | 19.2 | 18.8 | 18.3 | 17.8 | 17.4 | 16.9 | 16.5 | 16.1 | 15.7 | 15.3 | 14.9 | 14.5 |
| 29.4 | 20.0 | 19.5 | 19.0 | 18.5 | 18.1 | 17.6 | 17.2 | 16.7 | 16.3 | 15.9 | 15.5 | 15.1 | 14.7 |
| 29.6 | 20.3 | 19.8 | 19.3 | 18.8 | 18.3 | 17.8 | 17.4 | 16.9 | 16.5 | 16.1 | 15.7 | 15.3 | 14.9 |
| 29.8 | 20.6 | 20.0 | 19.5 | 19.0 | 18.6 | 18.1 | 17.6 | 17.2 | 16.7 | 16.3 | 15.9 | 15.5 | 15.1 |
| 30.0 | 20.8 | 20.3 | 19.8 | 19.3 | 18.8 | 18.3 | 17.9 | 17.4 | 17.0 | 16.5 | 16.1 | 15.7 | 15.3 |
| 30.2 | 21.1 | 20.6 | 20.1 | 19.5 | 19.0 | 18.6 | 18.1 | 17.6 | 17.2 | 16.8 | 16.3 | 15.9 | 15.5 |
| 30.4 | 21.4 | 20.8 | 20.3 | 19.8 | 19.3 | 18.8 | 18.3 | 17.9 | 17.4 | 17.0 | 16.5 | 16.1 | 15.7 |
| 30.6 | 21.7 | 21.1 | 20.6 | 20.1 | 19.6 | 19.1 | 18.6 | 18.1 | 17.6 | 17.2 | 16.8 | 16.3 | 15.9 |
| 30.8 | 21.9 | 21.4 | 20.8 | 20.3 | 19.8 | 19.3 | 18.8 | 18.3 | 17.9 | 17.4 | 17.0 | 16.5 | 16.1 |
| 31.0 | 22.2 | 21.7 | 21.1 | 20.6 | 20.1 | 19.6 | 19.1 | 18.6 | 18.1 | 17.6 | 17.2 | 16.8 | 16.3 |
| 31.2 | 22.5 | 21.9 | 21.4 | 20.8 | 20.3 | 19.8 | 19.3 | 18.8 | 18.3 | 17.9 | 17.4 | 17.0 | 16.5 |
| 31.4 | 22.8 | 22.2 | 21.7 | 21.1 | 20.6 | 20.1 | 19.5 | 19.1 | 18.6 | 18.1 | 17.6 | 17.2 | 16.8 |
| 31.6 | 23.1 | 22.5 | 21.9 | 21.4 | 20.8 | 20.3 | 19.8 | 19.3 | 18.8 | 18.3 | 17.9 | 17.4 | 17.0 |
| 31.8 | 23.4 | 22.8 | 22.2 | 21.7 | 21.1 | 20.6 | 20.0 | 19.5 | 19.0 | 18.6 | 18.1 | 17.6 | 17.2 |
| 32.0 | 23.7 | 23.1 | 22.5 | 21.9 | 21.4 | 20.8 | 20.3 | 19.8 | 19.3 | 18.8 | 18.3 | 17.9 | 17.4 |
| 32.2 | 24.0 | 23.4 | 22.8 | 22.2 | 21.6 | 21.1 | 20.5 | 20.0 | 19.5 | 19.0 | 18.5 | 18.1 | 17.6 |
| 32.4 | 24.3 | 23.7 | 23.1 | 22.5 | 21.9 | 21.3 | 20.8 | 20.3 | 19.8 | 19.3 | 18.8 | 18.3 | 17.8 |
| 32.6 | 24.6 | 23.9 | 23.3 | 22.7 | 22.2 | 21.6 | 21.1 | 20.5 | 20.0 | 19.5 | 19.0 | 18.5 | 18.1 |
| 32.8 | 24.9 | 24.2 | 23.6 | 23.0 | 22.4 | 21.9 | 21.3 | 20.8 | 20.2 | 19.7 | 19.2 | 18.7 | 18.3 |
| 33.0 | 25.2 | 24.5 | 23.9 | 23.3 | 22.7 | 22.1 | 21.6 | 21.0 | 20.5 | 20.0 | 19.5 | 19.0 | 18.5 |
| 33.2 | 25.5 | 24.8 | 24.2 | 23.6 | 23.0 | 22.4 | 21.8 | 21.3 | 20.7 | 20.2 | 19.7 | 19.2 | 18.7 |
| 33.4 | 25.8 | 25.1 | 24.5 | 23.9 | 23.3 | 22.7 | 22.1 | 21.5 | 21.0 | 20.5 | 19.9 | 19.4 | 18.9 |
| 33.6 | 26.1 | 25.4 | 24.8 | 24.1 | 23.5 | 22.9 | 22.4 | 21.8 | 21.2 | 20.7 | 20.2 | 19.7 | 19.2 |
| 33.8 | 26.4 | 25.7 | 25.1 | 24.4 | 23.8 | 23.2 | 22.6 | 22.1 | 21.5 | 20.9 | 20.4 | 19.9 | 19.4 |
| 34.0 | 26.7 | 26.0 | 25.4 | 24.7 | 24.1 | 23.5 | 22.9 | 22.3 | 21.7 | 21.2 | 20.7 | 20.1 | 19.6 |
| 34.2 | 27.0 | 26.3 | 25.7 | 25.0 | 24.4 | 23.8 | 23.2 | 22.6 | 22.0 | 21.4 | 20.9 | 20.4 | 19.9 |
| 34.4 | 27.3 | 26.6 | 26.0 | 25.3 | 24.7 | 24.0 | 23.4 | 22.8 | 22.3 | 21.7 | 21.1 | 20.6 | 20.1 |
| 34.6 | 27.6 | 26.9 | 26.3 | 25.6 | 24.9 | 24.3 | 23.7 | 23.1 | 22.5 | 21.9 | 21.4 | 20.8 | 20.3 |
| 34.8 | 28.0 | 27.3 | 26.6 | 25.9 | 25.2 | 24.6 | 24.0 | 23.4 | 22.8 | 22.2 | 21.6 | 21.1 | 20.5 |
| 35.0 | 28.3 | 27.6 | 26.9 | 26.2 | 25.5 | 24.9 | 24.2 | 23.6 | 23.0 | 22.4 | 21.9 | 21.3 | 20.8 |
| 35.2 | 28.6 | 27.9 | 27.2 | 26.5 | 25.8 | 25.2 | 24.5 | 23.9 | 23.3 | 22.7 | 22.1 | 21.6 | 21.0 |
| 35.4 | 28.9 | 28.2 | 27.5 | 26.8 | 26.1 | 25.4 | 24.8 | 24.2 | 23.6 | 23.0 | 22.4 | 21.8 | 21.3 |
| 35.6 | 29.3 | 28.5 | 27.8 | 27.1 | 26.4 | 25.7 | 25.1 | 24.4 | 23.8 | 23.2 | 22.6 | 22.1 | 21.5 |
| 35.8 | 29.6 | 28.8 | 28.1 | 27.4 | 26.7 | 26.0 | 25.4 | 24.7 | 24.1 | 23.5 | 22.9 | 22.3 | 21.7 |
| 36.0 | 29.9 | 29.2 | 28.4 | 27.7 | 27.0 | 26.3 | 25.6 | 25.0 | 24.4 | 23.7 | 23.1 | 22.6 | 22.0 |
| 36.2 | 30.2 | 29.5 | 28.7 | 28.0 | 27.3 | 26.6 | 25.9 | 25.3 | 24.6 | 24.0 | 23.4 | 22.8 | 22.2 |
| 36.4 | 30.6 | 29.8 | 29.0 | 28.3 | 27.6 | 26.9 | 26.2 | 25.5 | 24.9 | 24.3 | 23.6 | 23.1 | 22.5 |
| 36.6 | 30.9 | 30.1 | 29.4 | 28.6 | 27.9 | 27.2 | 26.5 | 25.8 | 25.2 | 24.5 | 23.9 | 23.3 | 22.7 |
| 36.8 | 31.2 | 30.5 | 29.7 | 28.9 | 28.2 | 27.5 | 26.8 | 26.1 | 25.4 | 24.8 | 24.2 | 23.6 | 23.0 |
| 37.0 | 31.6 | 30.8 | 30.0 | 29.2 | 28.5 | 27.8 | 27.1 | 26.4 | 25.7 | 25.1 | 24.4 | 23.8 | 23.2 |
| 37.2 | 31.9 | 31.1 | 30.3 | 29.6 | 28.8 | 28.1 | 27.4 | 26.7 | 26.0 | 25.3 | 24.7 | 24.1 | 23.5 |
| 37.4 | 32.3 | 31.4 | 30.6 | 29.9 | 29.1 | 28.4 | 27.7 | 27.0 | 26.3 | 25.6 | 25.0 | 24.3 | 23.7 |
| 37.6 | 32.6 | 31.8 | 31.0 | 30.2 | 29.4 | 28.7 | 27.9 | 27.2 | 26.6 | 25.9 | 25.2 | 24.6 | 24.0 |
| 37.8 | 32.9 | 32.1 | 31.3 | 30.5 | 29.7 | 29.0 | 28.2 | 27.5 | 26.8 | 26.2 | 25.5 | 24.8 | 24.2 |
| 38.0 | 33.3 | 32.5 | 31.6 | 30.8 | 30.0 | 29.3 | 28.5 | 27.8 | 27.1 | 26.4 | 25.8 | 25.1 | 24.5 |
| 38.2 | 33.6 | 32.8 | 32.0 | 31.2 | 30.4 | 29.6 | 28.8 | 28.1 | 27.4 | 26.7 | 26.0 | 25.4 | 24.7 |
| 38.4 | 34.0 | 33.1 | 32.3 | 31.5 | 30.7 | 29.9 | 29.1 | 28.4 | 27.7 | 27.0 | 26.3 | 25.6 | 25.0 |
| 38.6 | 34.3 | 33.5 | 32.6 | 31.8 | 31.0 | 30.2 | 29.4 | 28.7 | 28.0 | 27.3 | 26.6 | 25.9 | 25.2 |
| 38.8 | 34.7 | 33.8 | 33.0 | 32.1 | 31.3 | 30.5 | 29.7 | 29.0 | 28.3 | 27.5 | 26.8 | 26.2 | 25.5 |
| 39.0 | 35.1 | 34.2 | 33.3 | 32.5 | 31.6 | 30.8 | 30.1 | 29.3 | 28.5 | 27.8 | 27.1 | 26.4 | 25.8 |
| 39.2 | 35.4 | 34.5 | 33.6 | 32.8 | 32.0 | 31.1 | 30.4 | 29.6 | 28.8 | 28.1 | 27.4 | 26.7 | 26.0 |
| 39.4 | 35.8 | 34.9 | 34.0 | 33.1 | 32.3 | 31.5 | 30.7 | 29.9 | 29.1 | 28.4 | 27.7 | 27.0 | 26.3 |
| 39.6 | 36.1 | 35.2 | 34.3 | 33.5 | 32.6 | 31.8 | 31.0 | 30.2 | 29.4 | 28.7 | 28.0 | 27.2 | 26.6 |
| 39.8 | 36.5 | 35.6 | 34.7 | 33.8 | 32.9 | 32.1 | 31.3 | 30.5 | 29.7 | 29.0 | 28.2 | 27.5 | 26.8 |
| 40.0 | 36.9 | 35.9 | 35.0 | 34.1 | 33.3 | 32.4 | 31.6 | 30.8 | 30.0 | 29.3 | 28.5 | 27.8 | 27.1 |
| 40.2 | 37.2 | 36.3 | 35.4 | 34.5 | 33.6 | 32.7 | 31.9 | 31.1 | 30.3 | 29.5 | 28.8 | 28.1 | 27.4 |
| 40.4 | 37.6 | 36.6 | 35.7 | 34.8 | 33.9 | 33.1 | 32.2 | 31.4 | 30.6 | 29.8 | 29.1 | 28.3 | 27.6 |
| 40.6 | 38.0 | 37.0 | 36.1 | 35.2 | 34.3 | 33.4 | 32.5 | 31.7 | 30.9 | 30.1 | 29.4 | 28.6 | 27.9 |
| 40.8 | 38.3 | 37.4 | 36.4 | 35.5 | 34.6 | 33.7 | 32.9 | 32.0 | 31.2 | 30.4 | 29.7 | 28.9 | 28.2 |
| 41.0 | 38.7 | 37.7 | 36.8 | 35.8 | 34.9 | 34.0 | 33.2 | 32.3 | 31.5 | 30.7 | 29.9 | 29.2 | 28.4 |
| 41.2 | 39.1 | 38.1 | 37.1 | 36.2 | 35.3 | 34.4 | 33.5 | 32.7 | 31.8 | 31.0 | 30.2 | 29.5 | 28.7 |
| 41.4 | 39.5 | 38.5 | 37.5 | 36.5 | 35.6 | 34.7 | 33.8 | 33.0 | 32.1 | 31.3 | 30.5 | 29.8 | 29.0 |
| 41.6 | 39.8 | 38.8 | 37.9 | 36.9 | 36.0 | 35.0 | 34.2 | 33.3 | 32.4 | 31.6 | 30.8 | 30.0 | 29.3 |
| 41.8 | 40.2 | 39.2 | 38.2 | 37.2 | 36.3 | 35.4 | 34.5 | 33.6 | 32.8 | 31.9 | 31.1 | 30.3 | 29.6 |
| 42.0 | 40.6 | 39.6 | 38.6 | 37.6 | 36.6 | 35.7 | 34.8 | 33.9 | 33.1 | 32.2 | 31.4 | 30.6 | 29.8 |
| 42.2 | 41.0 | 40.0 | 38.9 | 38.0 | 37.0 | 36.1 | 35.1 | 34.3 | 33.4 | 32.5 | 31.7 | 30.9 | 30.1 |
| 42.4 | 41.4 | 40.3 | 39.3 | 38.3 | 37.3 | 36.4 | 35.5 | 34.6 | 33.7 | 32.8 | 32.0 | 31.2 | 30.4 |
| 42.6 | 41.8 | 40.7 | 39.7 | 38.7 | 37.7 | 36.7 | 35.8 | 34.9 | 34.0 | 33.2 | 32.3 | 31.5 | 30.7 |
| 42.8 | 42.2 | 41.1 | 40.0 | 39.0 | 38.0 | 37.1 | 36.1 | 35.2 | 34.3 | 33.5 | 32.6 | 31.8 | 31.0 |
| 43.0 | 42.6 | 41.5 | 40.4 | 39.4 | 38.4 | 37.4 | 36.5 | 35.6 | 34.6 | 33.8 | 32.9 | 32.1 | 31.3 |
| 43.2 | 42.9 | 41.9 | 40.8 | 39.8 | 38.8 | 37.8 | 36.8 | 35.9 | 35.0 | 34.1 | 33.2 | 32.4 | 31.6 |
| 43.4 | 43.3 | 42.2 | 41.2 | 40.1 | 39.1 | 38.1 | 37.2 | 36.2 | 35.3 | 34.4 | 33.5 | 32.7 | 31.8 |
| 43.6 | 43.7 | 42.6 | 41.5 | 40.5 | 39.5 | 38.5 | 37.5 | 36.5 | 35.6 | 34.7 | 33.8 | 33.0 | 32.1 |
| 43.8 | 44.1 | 43.0 | 41.9 | 40.9 | 39.8 | 38.8 | 37.8 | 36.9 | 35.9 | 35.0 | 34.1 | 33.3 | 32.4 |
| 44.0 | 44.5 | 43.4 | 42.3 | 41.2 | 40.2 | 39.2 | 38.2 | 37.2 | 36.3 | 35.3 | 34.5 | 33.6 | 32.7 |
| 44.2 | 44.9 | 43.8 | 42.7 | 41.6 | 40.6 | 39.5 | 38.5 | 37.5 | 36.6 | 35.7 | 34.8 | 33.9 | 33.0 |
| 44.4 | 45.3 | 44.2 | 43.1 | 42.0 | 40.9 | 39.9 | 38.9 | 37.9 | 36.9 | 36.0 | 35.1 | 34.2 | 33.3 |
| 44.6 | 45.7 | 44.6 | 43.5 | 42.4 | 41.3 | 40.2 | 39.2 | 38.2 | 37.3 | 36.3 | 35.4 | 34.5 | 33.6 |
| 44.8 | 46.2 | 45.0 | 43.8 | 42.7 | 41.7 | 40.6 | 39.6 | 38.6 | 37.6 | 36.6 | 35.7 | 34.8 | 33.9 |
| 45.0 | 46.6 | 45.4 | 44.2 | 43.1 | 42.0 | 41.0 | 39.9 | 38.9 | 37.9 | 37.0 | 36.0 | 35.1 | 34.2 |
| 45.2 | 47.0 | 45.8 | 44.6 | 43.5 | 42.4 | 41.3 | 40.3 | 39.3 | 38.3 | 37.3 | 36.3 | 35.4 | 34.5 |
| 45.4 | 47.4 | 46.2 | 45.0 | 43.9 | 42.8 | 41.7 | 40.6 | 39.6 | 38.6 | 37.6 | 36.7 | 35.7 | 34.8 |
| 45.6 | 47.8 | 46.6 | 45.4 | 44.3 | 43.1 | 42.0 | 41.0 | 39.9 | 38.9 | 37.9 | 37.0 | 36.0 | 35.1 |
| 45.8 | 48.2 | 47.0 | 45.8 | 44.6 | 43.5 | 42.4 | 41.3 | 40.3 | 39.3 | 38.3 | 37.3 | 36.4 | 35.4 |
| 46.0 | 48.6 | 47.4 | 46.2 | 45.0 | 43.9 | 42.8 | 41.7 | 40.6 | 39.6 | 38.6 | 37.6 | 36.7 | 35.7 |
| 46.2 | 49.1 | 47.8 | 46.6 | 45.4 | 44.3 | 43.2 | 42.1 | 41.0 | 40.0 | 38.9 | 38.0 | 37.0 | 36.1 |
| 46.4 | 49.5 | 48.2 | 47.0 | 45.8 | 44.7 | 43.5 | 42.4 | 41.3 | 40.3 | 39.3 | 38.3 | 37.3 | 36.4 |
| 46.6 | 49.9 | 48.6 | 47.4 | 46.2 | 45.0 | 43.9 | 42.8 | 41.7 | 40.6 | 39.6 | 38.6 | 37.6 | 36.7 |
| 46.8 | 50.3 | 49.1 | 47.8 | 46.6 | 45.4 | 44.3 | 43.1 | 42.1 | 41.0 | 40.0 | 38.9 | 38.0 | 37.0 |
| 47.0 | 50.8 | 49.5 | 48.2 | 47.0 | 45.8 | 44.6 | 43.5 | 42.4 | 41.3 | 40.3 | 39.3 | 38.3 | 37.3 |
| 47.2 | 51.2 | 49.9 | 48.6 | 47.4 | 46.2 | 45.0 | 43.9 | 42.8 | 41.7 | 40.6 | 39.6 | 38.6 | 37.6 |
| 47.4 | 51.6 | 50.3 | 49.0 | 47.8 | 46.6 | 45.4 | 44.3 | 43.1 | 42.0 | 41.0 | 39.9 | 38.9 | 37.9 |
| 47.6 | 52.1 | 50.7 | 49.5 | 48.2 | 47.0 | 45.8 | 44.6 | 43.5 | 42.4 | 41.3 | 40.3 | 39.2 | 38.3 |
| 47.8 | 52.5 | 51.2 | 49.9 | 48.6 | 47.4 | 46.2 | 45.0 | 43.9 | 42.7 | 41.7 | 40.6 | 39.6 | 38.6 |
| 48.0 | 52.9 | 51.6 | 50.3 | 49.0 | 47.8 | 46.6 | 45.4 | 44.2 | 43.1 | 42.0 | 40.9 | 39.9 | 38.9 |
| 48.2 | 53.4 | 52.0 | 50.7 | 49.4 | 48.2 | 46.9 | 45.7 | 44.6 | 43.5 | 42.4 | 41.3 | 40.2 | 39.2 |
| 48.4 | 53.8 | 52.4 | 51.1 | 49.8 | 48.6 | 47.3 | 46.1 | 45.0 | 43.8 | 42.7 | 41.6 | 40.6 | 39.5 |
| 48.6 | 54.2 | 52.9 | 51.5 | 50.2 | 49.0 | 47.7 | 46.5 | 45.3 | 44.2 | 43.1 | 42.0 | 40.9 | 39.9 |
| 48.8 | 54.7 | 53.3 | 52.0 | 50.6 | 49.4 | 48.1 | 46.9 | 45.7 | 44.5 | 43.4 | 42.3 | 41.2 | 40.2 |
| 49.0 | 55.1 | 53.7 | 52.4 | 51.1 | 49.8 | 48.5 | 47.3 | 46.1 | 44.9 | 43.8 | 42.7 | 41.6 | 40.5 |
| 49.2 | 55.6 | 54.2 | 52.8 | 51.5 | 50.2 | 48.9 | 47.6 | 46.4 | 45.3 | 44.1 | 43.0 | 41.9 | 40.8 |
| 49.4 | 56.0 | 54.6 | 53.2 | 51.9 | 50.6 | 49.3 | 48.0 | 46.8 | 45.6 | 44.5 | 43.3 | 42.2 | 41.2 |
| 49.6 | 56.5 | 55.1 | 53.7 | 52.3 | 51.0 | 49.7 | 48.4 | 47.2 | 46.0 | 44.8 | 43.7 | 42.6 | 41.5 |
| 49.8 | 56.9 | 55.5 | 54.1 | 52.7 | 51.4 | 50.1 | 48.8 | 47.6 | 46.4 | 45.2 | 44.0 | 42.9 | 41.8 |
| 50.0 | 57.4 | 55.9 | 54.5 | 53.1 | 51.8 | 50.5 | 49.2 | 48.0 | 46.7 | 45.6 | 44.4 | 43.3 | 42.2 |
| 50.2 | 57.8 | 56.4 | 55.0 | 53.6 | 52.2 | 50.9 | 49.6 | 48.3 | 47.1 | 45.9 | 44.8 | 43.6 | 42.5 |
| 50.4 | 58.3 | 56.8 | 55.4 | 54.0 | 52.6 | 51.3 | 50.0 | 48.7 | 47.5 | 46.3 | 45.1 | 44.0 | 42.8 |
| 50.6 | 58.8 | 57.3 | 55.8 | 54.4 | 53.0 | 51.7 | 50.4 | 49.1 | 47.9 | 46.6 | 45.5 | 44.3 | 43.2 |
| 50.8 | 59.2 | 57.7 | 56.3 | 54.8 | 53.4 | 52.1 | 50.8 | 49.5 | 48.2 | 47.0 | 45.8 | 44.7 | 43.5 |
| 51.0 | 59.7 | 58.2 | 56.7 | 55.3 | 53.9 | 52.5 | 51.2 | 49.9 | 48.6 | 47.4 | 46.2 | 45.0 | 43.9 |
| 51.2 | 60.2 | 58.6 | 57.1 | 55.7 | 54.3 | 52.9 | 51.6 | 50.3 | 49.0 | 47.7 | 46.5 | 45.4 | 44.2 |
| 51.4 | — | 59.1 | 57.6 | 56.1 | 54.7 | 53.3 | 52.0 | 50.7 | 49.4 | 48.1 | 46.9 | 45.7 | 44.6 |
| 51.6 | — | 59.5 | 58.0 | 56.6 | 55.1 | 53.7 | 52.4 | 51.0 | 49.8 | 48.5 | 47.3 | 46.1 | 44.9 |
| 51.8 | — | 60.0 | 58.5 | 57.0 | 55.6 | 54.1 | 52.8 | 51.4 | 50.1 | 48.9 | 47.6 | 46.4 | 45.2 |
| 52.0 | — | — | 58.9 | 57.4 | 56.0 | 54.6 | 53.2 | 51.8 | 50.5 | 49.2 | 48.0 | 46.8 | 45.6 |
| 52.2 | — | — | 59.4 | 57.9 | 56.4 | 55.0 | 53.6 | 52.2 | 50.9 | 49.6 | 48.4 | 47.1 | 45.9 |
| 52.4 | — | — | 59.8 | 58.3 | 56.8 | 55.4 | 54.0 | 52.6 | 51.3 | 50.0 | 48.7 | 47.5 | 46.3 |
| 52.6 | — | — | — | 58.8 | 57.3 | 55.8 | 54.4 | 53.0 | 51.7 | 50.4 | 49.1 | 47.9 | 46.6 |
| 52.8 | — | — | — | 59.2 | 57.7 | 56.2 | 54.8 | 53.4 | 52.1 | 50.8 | 49.5 | 48.2 | 47.0 |
| 53.0 | — | — | — | 59.7 | 58.1 | 56.7 | 55.2 | 53.8 | 52.5 | 51.1 | 49.8 | 48.6 | 47.3 |
| 53.2 | — | — | — | 60.1 | 58.6 | 57.1 | 55.6 | 54.2 | 52.9 | 51.5 | 50.2 | 48.9 | 47.7 |
| 53.4 | — | — | — | — | 59.0 | 57.5 | 56.1 | 54.6 | 53.3 | 51.9 | 50.6 | 49.3 | 48.1 |
| 53.6 | — | — | — | — | 59.5 | 57.9 | 56.5 | 55.0 | 53.6 | 52.3 | 51.0 | 49.7 | 48.4 |
| 53.8 | — | — | — | — | 59.9 | 58.4 | 56.9 | 55.5 | 54.0 | 52.7 | 51.3 | 50.0 | 48.8 |
| 54.0 | — | — | — | — | — | 58.8 | 57.3 | 55.9 | 54.4 | 53.1 | 51.7 | 50.4 | 49.1 |
| 54.2 | — | — | — | — | — | 59.2 | 57.7 | 56.3 | 54.8 | 53.5 | 52.1 | 50.8 | 49.5 |
| 54.4 | — | — | — | — | — | 59.7 | 58.2 | 56.7 | 55.2 | 53.8 | 52.5 | 51.2 | 49.9 |
| 54.6 | — | — | — | — | — | 60.1 | 58.6 | 57.1 | 55.7 | 54.2 | 52.9 | 51.5 | 50.2 |
| 54.8 | — | — | — | — | — | — | 59.0 | 57.5 | 56.1 | 54.6 | 53.3 | 51.9 | 50.6 |
| 55.0 | — | — | — | — | — | — | 59.4 | 57.9 | 56.5 | 55.0 | 53.6 | 52.3 | 51.0 |
| 55.2 | — | — | — | — | — | — | 59.9 | 58.4 | 56.9 | 55.4 | 54.0 | 52.7 | 51.3 |
| 55.4 | — | — | — | — | — | — | — | 58.8 | 57.3 | 55.8 | 54.4 | 53.0 | 51.7 |
| 55.6 | — | — | — | — | — | — | — | 59.2 | 57.7 | 56.2 | 54.8 | 53.4 | 52.1 |
| 55.8 | — | — | — | — | — | — | — | 59.6 | 58.1 | 56.6 | 55.2 | 53.8 | 52.4 |
| 56.0 | — | — | — | — | — | — | — | 60.0 | 58.5 | 57.0 | 55.6 | 54.2 | 52.8 |
| 56.2 | — | — | — | — | — | — | — | — | 58.9 | 57.4 | 56.0 | 54.6 | 53.2 |
| 56.4 | — | — | — | — | — | — | — | — | 59.4 | 57.8 | 56.4 | 55.0 | 53.6 |
| 56.6 | — | — | — | — | — | — | — | — | 59.8 | 58.3 | 56.8 | 55.3 | 53.9 |
| 56.8 | — | — | — | — | — | — | — | — | 60.2 | 58.7 | 57.2 | 55.7 | 54.3 |
| 57.0 | — | — | — | — | — | — | — | — | — | 59.1 | 57.6 | 56.1 | 54.7 |
| 57.2 | — | — | — | — | — | — | — | — | — | 59.5 | 58.0 | 56.5 | 55.1 |
| 57.4 | — | — | — | — | — | — | — | — | — | 59.9 | 58.4 | 56.9 | 55.5 |
| 57.6 | — | — | — | — | — | — | — | — | — | — | 58.8 | 57.3 | 55.8 |
| 57.8 | — | — | — | — | — | — | — | — | — | — | 59.2 | 57.7 | 56.2 |
| 58.0 | — | — | — | — | — | — | — | — | — | — | 59.6 | 58.1 | 56.6 |
| 58.2 | — | — | — | — | — | — | — | — | — | — | 60.0 | 58.5 | 57.0 |
| 58.4 | — | — | — | — | — | — | — | — | — | — | — | 58.9 | 57.4 |
| 58.6 | — | — | — | — | — | — | — | — | — | — | — | 59.3 | 57.8 |
| 58.8 | — | — | — | — | — | — | — | — | — | — | — | 59.7 | 58.2 |
| 59.0 | — | — | — | — | — | — | — | — | — | — | — | 60.1 | 58.6 |
| 59.2 | — | — | — | — | — | — | — | — | — | — | — | — | 59.0 |
| 59.4 | — | — | — | — | — | — | — | — | — | — | — | — | 59.4 |
| 59.6 | — | — | — | — | — | — | — | — | — | — | — | — | 59.8 |

注:1 表中未注明的测区混凝土强度换算值为小于10 MPa或大于60MPa。

2 表中数值是根据曲线方程计算。



# 附录E 泵送混凝土侧面水平测区强度换算表

**表E 泵送混凝土侧面水平测区强度换算表**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **平均**  **回弹**  **值Rm** | **测区混凝土强度换算值 （MPa）** | | | | | | | | | | | | |
| **平均碳化深度值dm（mm）** | | | | | | | | | | | | |
| **0.0** | **0.5** | **1.0** | **1.5** | **2.0** | **2.5** | **3.0** | **3.5** | **4.0** | **4.5** | **5.0** | **5.5** | **≥6.0** |
| 16.0 | 10.0 | — | — | — | — | — | — | — | — | — | — | — | — |
| 16.2 | 10.2 | 10.0 | — | — | — | — | — | — | — | — | — | — | — |
| 16.4 | 10.4 | 10.2 | 10.1 | — | — | — | — | — | — | — | — | — | — |
| 16.6 | 10.6 | 10.4 | 10.3 | 10.1 | — | — | — | — | — | — | — | — | — |
| 16.8 | 10.8 | 10.6 | 10.5 | 10.3 | 10.1 | — | — | — | — | — | — | — | — |
| 17.0 | 11.0 | 10.8 | 10.7 | 10.5 | 10.3 | 10.1 | 10.0 | — | — | — | — | — | — |
| 17.2 | 11.2 | 11.1 | 10.9 | 10.7 | 10.5 | 10.3 | 10.2 | 10.0 | — | — | — | — | — |
| 17.4 | 11.5 | 11.3 | 11.1 | 10.9 | 10.7 | 10.5 | 10.4 | 10.2 | 10.0 | — | — | — | — |
| 17.6 | 11.7 | 11.5 | 11.3 | 11.1 | 10.9 | 10.7 | 10.6 | 10.4 | 10.2 | 10.0 | — | — | — |
| 17.8 | 11.9 | 11.7 | 11.5 | 11.3 | 11.1 | 10.9 | 10.8 | 10.6 | 10.4 | 10.2 | 10.1 | — | — |
| 18.0 | 12.1 | 11.9 | 11.7 | 11.5 | 11.3 | 11.2 | 11.0 | 10.8 | 10.6 | 10.4 | 10.3 | 10.1 | — |
| 18.2 | 12.4 | 12.1 | 11.9 | 11.7 | 11.6 | 11.4 | 11.2 | 11.0 | 10.8 | 10.6 | 10.4 | 10.3 | 10.1 |
| 18.4 | 12.6 | 12.4 | 12.2 | 12.0 | 11.8 | 11.6 | 11.4 | 11.2 | 11.0 | 10.8 | 10.6 | 10.5 | 10.3 |
| 18.6 | 12.8 | 12.6 | 12.4 | 12.2 | 12.0 | 11.8 | 11.6 | 11.4 | 11.2 | 11.0 | 10.8 | 10.6 | 10.5 |
| 18.8 | 13.0 | 12.8 | 12.6 | 12.4 | 12.2 | 12.0 | 11.8 | 11.6 | 11.4 | 11.2 | 11.0 | 10.8 | 10.7 |
| 19.0 | 13.3 | 13.0 | 12.8 | 12.6 | 12.4 | 12.2 | 12.0 | 11.8 | 11.6 | 11.4 | 11.2 | 11.0 | 10.8 |
| 19.2 | 13.5 | 13.3 | 13.1 | 12.8 | 12.6 | 12.4 | 12.2 | 12.0 | 11.8 | 11.6 | 11.4 | 11.2 | 11.0 |
| 19.4 | 13.7 | 13.5 | 13.3 | 13.1 | 12.8 | 12.6 | 12.4 | 12.2 | 12.0 | 11.8 | 11.6 | 11.4 | 11.2 |
| 19.6 | 14.0 | 13.7 | 13.5 | 13.3 | 13.1 | 12.8 | 12.6 | 12.4 | 12.2 | 12.0 | 11.8 | 11.6 | 11.4 |
| 19.8 | 14.2 | 14.0 | 13.7 | 13.5 | 13.3 | 13.1 | 12.8 | 12.6 | 12.4 | 12.2 | 12.0 | 11.8 | 11.6 |
| 20.0 | 14.4 | 14.2 | 14.0 | 13.7 | 13.5 | 13.3 | 13.1 | 12.8 | 12.6 | 12.4 | 12.2 | 12.0 | 11.8 |
| 20.2 | 14.7 | 14.4 | 14.2 | 14.0 | 13.7 | 13.5 | 13.3 | 13.1 | 12.8 | 12.6 | 12.4 | 12.2 | 12.0 |
| 20.4 | 14.9 | 14.7 | 14.4 | 14.2 | 14.0 | 13.7 | 13.5 | 13.3 | 13.0 | 12.8 | 12.6 | 12.4 | 12.2 |
| 20.6 | 15.2 | 14.9 | 14.7 | 14.4 | 14.2 | 13.9 | 13.7 | 13.5 | 13.3 | 13.0 | 12.8 | 12.6 | 12.4 |
| 20.8 | 15.4 | 15.2 | 14.9 | 14.7 | 14.4 | 14.2 | 13.9 | 13.7 | 13.5 | 13.3 | 13.0 | 12.8 | 12.6 |
| 21.0 | 15.7 | 15.4 | 15.1 | 14.9 | 14.6 | 14.4 | 14.2 | 13.9 | 13.7 | 13.5 | 13.2 | 13.0 | 12.8 |
| 21.2 | 15.9 | 15.6 | 15.4 | 15.1 | 14.9 | 14.6 | 14.4 | 14.1 | 13.9 | 13.7 | 13.4 | 13.2 | 13.0 |
| 21.4 | 16.2 | 15.9 | 15.6 | 15.4 | 15.1 | 14.9 | 14.6 | 14.4 | 14.1 | 13.9 | 13.7 | 13.4 | 13.2 |
| 21.6 | 16.4 | 16.1 | 15.9 | 15.6 | 15.3 | 15.1 | 14.8 | 14.6 | 14.3 | 14.1 | 13.9 | 13.6 | 13.4 |
| 21.8 | 16.7 | 16.4 | 16.1 | 15.8 | 15.6 | 15.3 | 15.1 | 14.8 | 14.6 | 14.3 | 14.1 | 13.9 | 13.6 |

| **续表E** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **平均**  **回弹**  **值Rm** | **测区混凝土强度换算值 （MPa）** | | | | | | | | | | | | |
| **平均碳化深度值dm（mm）** | | | | | | | | | | | | |
| **0.0** | **0.5** | **1.0** | **1.5** | **2.0** | **2.5** | **3.0** | **3.5** | **4.0** | **4.5** | **5.0** | **5.5** | **≥6.0** |
| 22.0 | 16.9 | 16.6 | 16.4 | 16.1 | 15.8 | 15.6 | 15.3 | 15.0 | 14.8 | 14.5 | 14.3 | 14.1 | 13.8 |
| 22.2 | 17.2 | 16.9 | 16.6 | 16.3 | 16.1 | 15.8 | 15.5 | 15.3 | 15.0 | 14.8 | 14.5 | 14.3 | 14.0 |
| 22.4 | 17.4 | 17.1 | 16.9 | 16.6 | 16.3 | 16.0 | 15.8 | 15.5 | 15.2 | 15.0 | 14.7 | 14.5 | 14.2 |
| 22.6 | 17.7 | 17.4 | 17.1 | 16.8 | 16.5 | 16.3 | 16.0 | 15.7 | 15.5 | 15.2 | 15.0 | 14.7 | 14.5 |
| 22.8 | 17.9 | 17.7 | 17.4 | 17.1 | 16.8 | 16.5 | 16.2 | 16.0 | 15.7 | 15.4 | 15.2 | 14.9 | 14.7 |
| 23.0 | 18.2 | 17.9 | 17.6 | 17.3 | 17.0 | 16.7 | 16.5 | 16.2 | 15.9 | 15.7 | 15.4 | 15.1 | 14.9 |
| 23.2 | 18.5 | 18.2 | 17.9 | 17.6 | 17.3 | 17.0 | 16.7 | 16.4 | 16.2 | 15.9 | 15.6 | 15.4 | 15.1 |
| 23.4 | 18.7 | 18.4 | 18.1 | 17.8 | 17.5 | 17.2 | 16.9 | 16.7 | 16.4 | 16.1 | 15.8 | 15.6 | 15.3 |
| 23.6 | 19.0 | 18.7 | 18.4 | 18.1 | 17.8 | 17.5 | 17.2 | 16.9 | 16.6 | 16.3 | 16.1 | 15.8 | 15.5 |
| 23.8 | 19.3 | 19.0 | 18.6 | 18.3 | 18.0 | 17.7 | 17.4 | 17.1 | 16.8 | 16.6 | 16.3 | 16.0 | 15.8 |
| 24.0 | 19.5 | 19.2 | 18.9 | 18.6 | 18.3 | 18.0 | 17.7 | 17.4 | 17.1 | 16.8 | 16.5 | 16.2 | 16.0 |
| 24.2 | 19.8 | 19.5 | 19.2 | 18.8 | 18.5 | 18.2 | 17.9 | 17.6 | 17.3 | 17.0 | 16.7 | 16.5 | 16.2 |
| 24.4 | 20.1 | 19.8 | 19.4 | 19.1 | 18.8 | 18.5 | 18.2 | 17.9 | 17.6 | 17.3 | 17.0 | 16.7 | 16.4 |
| 24.6 | 20.4 | 20.0 | 19.7 | 19.4 | 19.0 | 18.7 | 18.4 | 18.1 | 17.8 | 17.5 | 17.2 | 16.9 | 16.6 |
| 24.8 | 20.6 | 20.3 | 20.0 | 19.6 | 19.3 | 19.0 | 18.7 | 18.3 | 18.0 | 17.7 | 17.4 | 17.2 | 16.9 |
| 25.0 | 20.9 | 20.6 | 20.2 | 19.9 | 19.6 | 19.2 | 18.9 | 18.6 | 18.3 | 18.0 | 17.7 | 17.4 | 17.1 |
| 25.2 | 21.2 | 20.8 | 20.5 | 20.1 | 19.8 | 19.5 | 19.2 | 18.8 | 18.5 | 18.2 | 17.9 | 17.6 | 17.3 |
| 25.4 | 21.5 | 21.1 | 20.8 | 20.4 | 20.1 | 19.7 | 19.4 | 19.1 | 18.8 | 18.5 | 18.1 | 17.8 | 17.5 |
| 25.6 | 21.8 | 21.4 | 21.0 | 20.7 | 20.3 | 20.0 | 19.7 | 19.3 | 19.0 | 18.7 | 18.4 | 18.1 | 17.8 |
| 25.8 | 22.0 | 21.7 | 21.3 | 20.9 | 20.6 | 20.3 | 19.9 | 19.6 | 19.3 | 18.9 | 18.6 | 18.3 | 18.0 |
| 26.0 | 22.3 | 21.9 | 21.6 | 21.2 | 20.9 | 20.5 | 20.2 | 19.8 | 19.5 | 19.2 | 18.9 | 18.5 | 18.2 |
| 26.2 | 22.6 | 22.2 | 21.9 | 21.5 | 21.1 | 20.8 | 20.4 | 20.1 | 19.8 | 19.4 | 19.1 | 18.8 | 18.5 |
| 26.4 | 22.9 | 22.5 | 22.1 | 21.8 | 21.4 | 21.0 | 20.7 | 20.3 | 20.0 | 19.7 | 19.3 | 19.0 | 18.7 |
| 26.6 | 23.2 | 22.8 | 22.4 | 22.0 | 21.7 | 21.3 | 21.0 | 20.6 | 20.3 | 19.9 | 19.6 | 19.3 | 18.9 |
| 26.8 | 23.5 | 23.1 | 22.7 | 22.3 | 21.9 | 21.6 | 21.2 | 20.9 | 20.5 | 20.2 | 19.8 | 19.5 | 19.2 |
| 27.0 | 23.8 | 23.4 | 23.0 | 22.6 | 22.2 | 21.8 | 21.5 | 21.1 | 20.8 | 20.4 | 20.1 | 19.7 | 19.4 |
| 27.2 | 24.0 | 23.6 | 23.3 | 22.9 | 22.5 | 22.1 | 21.7 | 21.4 | 21.0 | 20.7 | 20.3 | 20.0 | 19.7 |
| 27.4 | 24.3 | 23.9 | 23.5 | 23.1 | 22.8 | 22.4 | 22.0 | 21.6 | 21.3 | 20.9 | 20.6 | 20.2 | 19.9 |
| 27.6 | 24.6 | 24.2 | 23.8 | 23.4 | 23.0 | 22.7 | 22.3 | 21.9 | 21.5 | 21.2 | 20.8 | 20.5 | 20.1 |
| 27.8 | 24.9 | 24.5 | 24.1 | 23.7 | 23.3 | 22.9 | 22.5 | 22.2 | 21.8 | 21.4 | 21.1 | 20.7 | 20.4 |
| 28.0 | 25.2 | 24.8 | 24.4 | 24.0 | 23.6 | 23.2 | 22.8 | 22.4 | 22.1 | 21.7 | 21.3 | 21.0 | 20.6 |
| 28.2 | 25.5 | 25.1 | 24.7 | 24.3 | 23.9 | 23.5 | 23.1 | 22.7 | 22.3 | 21.9 | 21.6 | 21.2 | 20.9 |
| 28.4 | 25.8 | 25.4 | 25.0 | 24.6 | 24.2 | 23.8 | 23.4 | 23.0 | 22.6 | 22.2 | 21.8 | 21.5 | 21.1 |
| 28.6 | 26.1 | 25.7 | 25.3 | 24.9 | 24.4 | 24.0 | 23.6 | 23.2 | 22.8 | 22.5 | 22.1 | 21.7 | 21.4 |
| 28.8 | 26.4 | 26.0 | 25.6 | 25.1 | 24.7 | 24.3 | 23.9 | 23.5 | 23.1 | 22.7 | 22.3 | 22.0 | 21.6 |
| 29.0 | 26.7 | 26.3 | 25.9 | 25.4 | 25.0 | 24.6 | 24.2 | 23.8 | 23.4 | 23.0 | 22.6 | 22.2 | 21.9 |
| 29.2 | 27.1 | 26.6 | 26.2 | 25.7 | 25.3 | 24.9 | 24.5 | 24.0 | 23.6 | 23.3 | 22.9 | 22.5 | 22.1 |
| 29.4 | 27.4 | 26.9 | 26.5 | 26.0 | 25.6 | 25.2 | 24.7 | 24.3 | 23.9 | 23.5 | 23.1 | 22.7 | 22.4 |
| 29.6 | 27.7 | 27.2 | 26.8 | 26.3 | 25.9 | 25.4 | 25.0 | 24.6 | 24.2 | 23.8 | 23.4 | 23.0 | 22.6 |
| 29.8 | 28.0 | 27.5 | 27.1 | 26.6 | 26.2 | 25.7 | 25.3 | 24.9 | 24.5 | 24.1 | 23.7 | 23.3 | 22.9 |
| 30.0 | 28.3 | 27.8 | 27.4 | 26.9 | 26.5 | 26.0 | 25.6 | 25.2 | 24.7 | 24.3 | 23.9 | 23.5 | 23.1 |
| 30.2 | 28.6 | 28.1 | 27.7 | 27.2 | 26.7 | 26.3 | 25.9 | 25.4 | 25.0 | 24.6 | 24.2 | 23.8 | 23.4 |
| 30.4 | 28.9 | 28.4 | 28.0 | 27.5 | 27.0 | 26.6 | 26.1 | 25.7 | 25.3 | 24.9 | 24.4 | 24.0 | 23.6 |
| 30.6 | 29.2 | 28.7 | 28.3 | 27.8 | 27.3 | 26.9 | 26.4 | 26.0 | 25.6 | 25.1 | 24.7 | 24.3 | 23.9 |
| 30.8 | 29.6 | 29.1 | 28.6 | 28.1 | 27.6 | 27.2 | 26.7 | 26.3 | 25.8 | 25.4 | 25.0 | 24.6 | 24.2 |
| 31.0 | 29.9 | 29.4 | 28.9 | 28.4 | 27.9 | 27.5 | 27.0 | 26.6 | 26.1 | 25.7 | 25.3 | 24.8 | 24.4 |
| 31.2 | 30.2 | 29.7 | 29.2 | 28.7 | 28.2 | 27.8 | 27.3 | 26.8 | 26.4 | 26.0 | 25.5 | 25.1 | 24.7 |
| 31.4 | 30.5 | 30.0 | 29.5 | 29.0 | 28.5 | 28.1 | 27.6 | 27.1 | 26.7 | 26.2 | 25.8 | 25.4 | 24.9 |
| 31.6 | 30.8 | 30.3 | 29.8 | 29.3 | 28.8 | 28.4 | 27.9 | 27.4 | 27.0 | 26.5 | 26.1 | 25.6 | 25.2 |
| 31.8 | 31.2 | 30.6 | 30.1 | 29.6 | 29.1 | 28.6 | 28.2 | 27.7 | 27.2 | 26.8 | 26.3 | 25.9 | 25.5 |
| 32.0 | 31.5 | 31.0 | 30.4 | 29.9 | 29.4 | 28.9 | 28.5 | 28.0 | 27.5 | 27.1 | 26.6 | 26.2 | 25.7 |
| 32.2 | 31.8 | 31.3 | 30.8 | 30.2 | 29.7 | 29.2 | 28.8 | 28.3 | 27.8 | 27.3 | 26.9 | 26.4 | 26.0 |
| 32.4 | 32.1 | 31.6 | 31.1 | 30.6 | 30.1 | 29.6 | 29.1 | 28.6 | 28.1 | 27.6 | 27.2 | 26.7 | 26.3 |
| 32.6 | 32.5 | 31.9 | 31.4 | 30.9 | 30.4 | 29.9 | 29.4 | 28.9 | 28.4 | 27.9 | 27.4 | 27.0 | 26.5 |
| 32.8 | 32.8 | 32.3 | 31.7 | 31.2 | 30.7 | 30.2 | 29.7 | 29.2 | 28.7 | 28.2 | 27.7 | 27.3 | 26.8 |
| 33.0 | 33.1 | 32.6 | 32.0 | 31.5 | 31.0 | 30.5 | 30.0 | 29.5 | 29.0 | 28.5 | 28.0 | 27.5 | 27.1 |
| 33.2 | 33.5 | 32.9 | 32.4 | 31.8 | 31.3 | 30.8 | 30.3 | 29.8 | 29.3 | 28.8 | 28.3 | 27.8 | 27.4 |
| 33.4 | 33.8 | 33.2 | 32.7 | 32.1 | 31.6 | 31.1 | 30.6 | 30.1 | 29.6 | 29.1 | 28.6 | 28.1 | 27.6 |
| 33.6 | 34.1 | 33.6 | 33.0 | 32.5 | 31.9 | 31.4 | 30.9 | 30.3 | 29.8 | 29.3 | 28.9 | 28.4 | 27.9 |
| 33.8 | 34.5 | 33.9 | 33.3 | 32.8 | 32.2 | 31.7 | 31.2 | 30.7 | 30.1 | 29.6 | 29.1 | 28.7 | 28.2 |
| 34.0 | 34.8 | 34.2 | 33.7 | 33.1 | 32.6 | 32.0 | 31.5 | 31.0 | 30.4 | 29.9 | 29.4 | 28.9 | 28.5 |
| 34.2 | 35.2 | 34.6 | 34.0 | 33.4 | 32.9 | 32.3 | 31.8 | 31.3 | 30.7 | 30.2 | 29.7 | 29.2 | 28.7 |
| 34.4 | 35.5 | 34.9 | 34.3 | 33.8 | 33.2 | 32.6 | 32.1 | 31.6 | 31.0 | 30.5 | 30.0 | 29.5 | 29.0 |
| 34.6 | 35.8 | 35.2 | 34.7 | 34.1 | 33.5 | 33.0 | 32.4 | 31.9 | 31.3 | 30.8 | 30.3 | 29.8 | 29.3 |
| 34.8 | 36.2 | 35.6 | 35.0 | 34.4 | 33.8 | 33.3 | 32.7 | 32.2 | 31.6 | 31.1 | 30.6 | 30.1 | 29.6 |
| 35.0 | 36.5 | 35.9 | 35.3 | 34.7 | 34.2 | 33.6 | 33.0 | 32.5 | 31.9 | 31.4 | 30.9 | 30.4 | 29.9 |
| 35.2 | 36.9 | 36.3 | 35.7 | 35.1 | 34.5 | 33.9 | 33.3 | 32.8 | 32.2 | 31.7 | 31.2 | 30.7 | 30.1 |
| 35.4 | 37.2 | 36.6 | 36.0 | 35.4 | 34.8 | 34.2 | 33.7 | 33.1 | 32.5 | 32.0 | 31.5 | 30.9 | 30.4 |
| 35.6 | 37.6 | 36.9 | 36.3 | 35.7 | 35.1 | 34.5 | 34.0 | 33.4 | 32.8 | 32.3 | 31.8 | 31.2 | 30.7 |
| 35.8 | 37.9 | 37.3 | 36.7 | 36.1 | 35.5 | 34.9 | 34.3 | 33.7 | 33.2 | 32.6 | 32.1 | 31.5 | 31.0 |
| 36.0 | 38.3 | 37.6 | 37.0 | 36.4 | 35.8 | 35.2 | 34.6 | 34.0 | 33.5 | 32.9 | 32.4 | 31.8 | 31.3 |
| 36.2 | 38.6 | 38.0 | 37.4 | 36.7 | 36.1 | 35.5 | 34.9 | 34.3 | 33.8 | 33.2 | 32.7 | 32.1 | 31.6 |
| 36.4 | 39.0 | 38.3 | 37.7 | 37.1 | 36.4 | 35.8 | 35.2 | 34.7 | 34.1 | 33.5 | 33.0 | 32.4 | 31.9 |
| 36.6 | 39.3 | 38.7 | 38.0 | 37.4 | 36.8 | 36.2 | 35.6 | 35.0 | 34.4 | 33.8 | 33.3 | 32.7 | 32.2 |
| 36.8 | 39.7 | 39.0 | 38.4 | 37.7 | 37.1 | 36.5 | 35.9 | 35.3 | 34.7 | 34.1 | 33.6 | 33.0 | 32.4 |
| 37.0 | 40.1 | 39.4 | 38.7 | 38.1 | 37.5 | 36.8 | 36.2 | 35.6 | 35.0 | 34.4 | 33.9 | 33.3 | 32.7 |
| 37.2 | 40.4 | 39.7 | 39.1 | 38.4 | 37.8 | 37.2 | 36.5 | 35.9 | 35.3 | 34.7 | 34.2 | 33.6 | 33.0 |
| 37.4 | 40.8 | 40.1 | 39.4 | 38.8 | 38.1 | 37.5 | 36.9 | 36.2 | 35.6 | 35.1 | 34.5 | 33.9 | 33.3 |
| 37.6 | 41.1 | 40.5 | 39.8 | 39.1 | 38.5 | 37.8 | 37.2 | 36.6 | 36.0 | 35.4 | 34.8 | 34.2 | 33.6 |
| 37.8 | 41.5 | 40.8 | 40.1 | 39.5 | 38.8 | 38.2 | 37.5 | 36.9 | 36.3 | 35.7 | 35.1 | 34.5 | 33.9 |
| 38.0 | 41.9 | 41.2 | 40.5 | 39.8 | 39.1 | 38.5 | 37.8 | 37.2 | 36.6 | 36.0 | 35.4 | 34.8 | 34.2 |
| 38.2 | 42.2 | 41.5 | 40.8 | 40.2 | 39.5 | 38.8 | 38.2 | 37.5 | 36.9 | 36.3 | 35.7 | 35.1 | 34.5 |
| 38.4 | 42.6 | 41.9 | 41.2 | 40.5 | 39.8 | 39.2 | 38.5 | 37.9 | 37.2 | 36.6 | 36.0 | 35.4 | 34.8 |
| 38.6 | 43.0 | 42.3 | 41.5 | 40.9 | 40.2 | 39.5 | 38.8 | 38.2 | 37.6 | 36.9 | 36.3 | 35.7 | 35.1 |
| 38.8 | 43.3 | 42.6 | 41.9 | 41.2 | 40.5 | 39.8 | 39.2 | 38.5 | 37.9 | 37.3 | 36.6 | 36.0 | 35.4 |
| 39.0 | 43.7 | 43.0 | 42.3 | 41.6 | 40.9 | 40.2 | 39.5 | 38.9 | 38.2 | 37.6 | 36.9 | 36.3 | 35.7 |
| 39.2 | 44.1 | 43.3 | 42.6 | 41.9 | 41.2 | 40.5 | 39.9 | 39.2 | 38.5 | 37.9 | 37.3 | 36.6 | 36.0 |
| 39.4 | 44.5 | 43.7 | 43.0 | 42.3 | 41.6 | 40.9 | 40.2 | 39.5 | 38.9 | 38.2 | 37.6 | 36.9 | 36.3 |
| 39.6 | 44.8 | 44.1 | 43.3 | 42.6 | 41.9 | 41.2 | 40.5 | 39.9 | 39.2 | 38.5 | 37.9 | 37.3 | 36.6 |
| 39.8 | 45.2 | 44.5 | 43.7 | 43.0 | 42.3 | 41.6 | 40.9 | 40.2 | 39.5 | 38.9 | 38.2 | 37.6 | 36.9 |
| 40.0 | 45.6 | 44.8 | 44.1 | 43.3 | 42.6 | 41.9 | 41.2 | 40.5 | 39.8 | 39.2 | 38.5 | 37.9 | 37.3 |
| 40.2 | 46.0 | 45.2 | 44.4 | 43.7 | 43.0 | 42.3 | 41.6 | 40.9 | 40.2 | 39.5 | 38.8 | 38.2 | 37.6 |
| 40.4 | 46.3 | 45.6 | 44.8 | 44.1 | 43.3 | 42.6 | 41.9 | 41.2 | 40.5 | 39.8 | 39.2 | 38.5 | 37.9 |
| 40.6 | 46.7 | 45.9 | 45.2 | 44.4 | 43.7 | 43.0 | 42.2 | 41.5 | 40.8 | 40.2 | 39.5 | 38.8 | 38.2 |
| 40.8 | 47.1 | 46.3 | 45.5 | 44.8 | 44.0 | 43.3 | 42.6 | 41.9 | 41.2 | 40.5 | 39.8 | 39.2 | 38.5 |
| 41.0 | 47.5 | 46.7 | 45.9 | 45.2 | 44.4 | 43.7 | 42.9 | 42.2 | 41.5 | 40.8 | 40.1 | 39.5 | 38.8 |
| 41.2 | 47.9 | 47.1 | 46.3 | 45.5 | 44.8 | 44.0 | 43.3 | 42.6 | 41.8 | 41.2 | 40.5 | 39.8 | 39.1 |
| 41.4 | 48.3 | 47.5 | 46.7 | 45.9 | 45.1 | 44.4 | 43.6 | 42.9 | 42.2 | 41.5 | 40.8 | 40.1 | 39.4 |
| 41.6 | 48.6 | 47.8 | 47.0 | 46.3 | 45.5 | 44.7 | 44.0 | 43.2 | 42.5 | 41.8 | 41.1 | 40.4 | 39.8 |
| 41.8 | 49.0 | 48.2 | 47.4 | 46.6 | 45.8 | 45.1 | 44.3 | 43.6 | 42.9 | 42.1 | 41.4 | 40.8 | 40.1 |
| 42.0 | 49.4 | 48.6 | 47.8 | 47.0 | 46.2 | 45.4 | 44.7 | 43.9 | 43.2 | 42.5 | 41.8 | 41.1 | 40.4 |
| 42.2 | 49.8 | 49.0 | 48.2 | 47.4 | 46.6 | 45.8 | 45.0 | 44.3 | 43.5 | 42.8 | 42.1 | 41.4 | 40.7 |
| 42.4 | 50.2 | 49.4 | 48.5 | 47.7 | 46.9 | 46.2 | 45.4 | 44.6 | 43.9 | 43.2 | 42.4 | 41.7 | 41.0 |
| 42.6 | 50.6 | 49.8 | 48.9 | 48.1 | 47.3 | 46.5 | 45.7 | 45.0 | 44.2 | 43.5 | 42.8 | 42.1 | 41.4 |
| 42.8 | 51.0 | 50.1 | 49.3 | 48.5 | 47.7 | 46.9 | 46.1 | 45.3 | 44.6 | 43.8 | 43.1 | 42.4 | 41.7 |
| 43.0 | 51.4 | 50.5 | 49.7 | 48.9 | 48.0 | 47.2 | 46.5 | 45.7 | 44.9 | 44.2 | 43.4 | 42.7 | 42.0 |
| 43.2 | 51.8 | 50.9 | 50.1 | 49.2 | 48.4 | 47.6 | 46.8 | 46.0 | 45.3 | 44.5 | 43.8 | 43.0 | 42.3 |
| 43.4 | 52.2 | 51.3 | 50.5 | 49.6 | 48.8 | 48.0 | 47.2 | 46.4 | 45.6 | 44.9 | 44.1 | 43.4 | 42.7 |
| 43.6 | 52.6 | 51.7 | 50.8 | 50.0 | 49.2 | 48.3 | 47.5 | 46.7 | 46.0 | 45.2 | 44.4 | 43.7 | 43.0 |
| 43.8 | 53.0 | 52.1 | 51.2 | 50.4 | 49.5 | 48.7 | 47.9 | 47.1 | 46.3 | 45.5 | 44.8 | 44.0 | 43.3 |
| 44.0 | 53.4 | 52.5 | 51.6 | 50.8 | 49.9 | 49.1 | 48.3 | 47.5 | 46.7 | 45.9 | 45.1 | 44.4 | 43.6 |
| 44.2 | 53.8 | 52.9 | 52.0 | 51.1 | 50.3 | 49.5 | 48.6 | 47.8 | 47.0 | 46.2 | 45.5 | 44.7 | 44.0 |
| 44.4 | 54.2 | 53.3 | 52.4 | 51.5 | 50.7 | 49.8 | 49.0 | 48.2 | 47.4 | 46.6 | 45.8 | 45.0 | 44.3 |
| 44.6 | 54.6 | 53.7 | 52.8 | 51.9 | 51.0 | 50.2 | 49.4 | 48.5 | 47.7 | 46.9 | 46.2 | 45.4 | 44.6 |
| 44.8 | 55.0 | 54.1 | 53.2 | 52.3 | 51.4 | 50.6 | 49.7 | 48.9 | 48.1 | 47.3 | 46.5 | 45.7 | 45.0 |
| 45.0 | 55.4 | 54.5 | 53.6 | 52.7 | 51.8 | 50.9 | 50.1 | 49.3 | 48.4 | 47.6 | 46.8 | 46.1 | 45.3 |
| 45.2 | 55.8 | 54.9 | 54.0 | 53.1 | 52.2 | 51.3 | 50.5 | 49.6 | 48.8 | 48.0 | 47.2 | 46.4 | 45.6 |
| 45.4 | 56.2 | 55.3 | 54.4 | 53.5 | 52.6 | 51.7 | 50.8 | 50.0 | 49.2 | 48.3 | 47.5 | 46.7 | 46.0 |
| 45.6 | 56.6 | 55.7 | 54.8 | 53.9 | 53.0 | 52.1 | 51.2 | 50.4 | 49.5 | 48.7 | 47.9 | 47.1 | 46.3 |
| 45.8 | 57.1 | 56.1 | 55.2 | 54.2 | 53.3 | 52.5 | 51.6 | 50.7 | 49.9 | 49.0 | 48.2 | 47.4 | 46.6 |
| 46.0 | 57.5 | 56.5 | 55.6 | 54.6 | 53.7 | 52.8 | 52.0 | 51.1 | 50.2 | 49.4 | 48.6 | 47.8 | 47.0 |
| 46.2 | 57.9 | 56.9 | 56.0 | 55.0 | 54.1 | 53.2 | 52.3 | 51.5 | 50.6 | 49.8 | 48.9 | 48.1 | 47.3 |
| 46.4 | 58.3 | 57.3 | 56.4 | 55.4 | 54.5 | 53.6 | 52.7 | 51.8 | 51.0 | 50.1 | 49.3 | 48.5 | 47.6 |
| 46.6 | 58.7 | 57.7 | 56.8 | 55.8 | 54.9 | 54.0 | 53.1 | 52.2 | 51.3 | 50.5 | 49.6 | 48.8 | 48.0 |
| 46.8 | 59.1 | 58.1 | 57.2 | 56.2 | 55.3 | 54.4 | 53.5 | 52.6 | 51.7 | 50.8 | 50.0 | 49.2 | 48.3 |
| 47.0 | 59.6 | 58.6 | 57.6 | 56.6 | 55.7 | 54.8 | 53.8 | 52.9 | 52.1 | 51.2 | 50.3 | 49.5 | 48.7 |
| 47.2 | 60.0 | 59.0 | 58.0 | 57.0 | 56.1 | 55.1 | 54.2 | 53.3 | 52.4 | 51.6 | 50.7 | 49.9 | 49.0 |
| 47.4 | — | 59.4 | 58.4 | 57.4 | 56.5 | 55.5 | 54.6 | 53.7 | 52.8 | 51.9 | 51.1 | 50.2 | 49.4 |
| 47.6 | — | 59.8 | 58.8 | 57.8 | 56.9 | 55.9 | 55.0 | 54.1 | 53.2 | 52.3 | 51.4 | 50.6 | 49.7 |
| 47.8 | — | 60.2 | 59.2 | 58.2 | 57.3 | 56.3 | 55.4 | 54.4 | 53.5 | 52.6 | 51.8 | 50.9 | 50.1 |
| 48.0 | — | — | 59.6 | 58.6 | 57.7 | 56.7 | 55.8 | 54.8 | 53.9 | 53.0 | 52.1 | 51.3 | 50.4 |
| 48.2 | — | — | 60.0 | 59.0 | 58.1 | 57.1 | 56.1 | 55.2 | 54.3 | 53.4 | 52.5 | 51.6 | 50.8 |
| 48.4 | — | — | — | 59.4 | 58.5 | 57.5 | 56.5 | 55.6 | 54.7 | 53.7 | 52.9 | 52.0 | 51.1 |
| 48.6 | — | — | — | 59.9 | 58.9 | 57.9 | 56.9 | 56.0 | 55.0 | 54.1 | 53.2 | 52.3 | 51.5 |
| 48.8 | — | — | — | — | 59.3 | 58.3 | 57.3 | 56.3 | 55.4 | 54.5 | 53.6 | 52.7 | 51.8 |
| 49.0 | — | — | — | — | 59.7 | 58.7 | 57.7 | 56.7 | 55.8 | 54.9 | 53.9 | 53.0 | 52.2 |
| 49.2 | — | — | — | — | 60.1 | 59.1 | 58.1 | 57.1 | 56.2 | 55.2 | 54.3 | 53.4 | 52.5 |
| 49.4 | — | — | — | — | — | 59.5 | 58.5 | 57.5 | 56.5 | 55.6 | 54.7 | 53.8 | 52.9 |
| 49.6 | — | — | — | — | — | 59.9 | 58.9 | 57.9 | 56.9 | 56.0 | 55.0 | 54.1 | 53.2 |
| 49.8 | — | — | — | — | — | — | 59.3 | 58.3 | 57.3 | 56.3 | 55.4 | 54.5 | 53.6 |
| 50.0 | — | — | — | — | — | — | 59.7 | 58.7 | 57.7 | 56.7 | 55.8 | 54.8 | 53.9 |
| 50.2 | — | — | — | — | — | — | 60.1 | 59.1 | 58.1 | 57.1 | 56.1 | 55.2 | 54.3 |
| 50.4 | — | — | — | — | — | — | — | 59.4 | 58.5 | 57.5 | 56.5 | 55.6 | 54.7 |
| 50.6 | — | — | — | — | — | — | — | 59.8 | 58.8 | 57.9 | 56.9 | 55.9 | 55.0 |
| 50.8 | — | — | — | — | — | — | — | 60.2 | 59.2 | 58.2 | 57.3 | 56.3 | 55.4 |
| 51.0 | — | — | — | — | — | — | — | — | 59.6 | 58.6 | 57.6 | 56.7 | 55.7 |
| 51.2 | — | — | — | — | — | — | — | — | 60.0 | 59.0 | 58.0 | 57.0 | 56.1 |
| 51.4 | — | — | — | — | — | — | — | — | — | 59.4 | 58.4 | 57.4 | 56.5 |
| 51.6 | — | — | — | — | — | — | — | — | — | 59.8 | 58.8 | 57.8 | 56.8 |
| 51.8 | — | — | — | — | — | — | — | — | — | 60.1 | 59.1 | 58.2 | 57.2 |
| 52.0 | — | — | — | — | — | — | — | — | — | — | 59.5 | 58.5 | 57.6 |
| 52.2 | — | — | — | — | — | — | — | — | — | — | 59.9 | 58.9 | 57.9 |
| 52.4 | — | — | — | — | — | — | — | — | — | — | — | 59.3 | 58.3 |
| 52.6 | — | — | — | — | — | — | — | — | — | — | — | 59.7 | 58.7 |
| 52.8 | — | — | — | — | — | — | — | — | — | — | — | 60.0 | 59.0 |
| 53.0 | — | — | — | — | — | — | — | — | — | — | — | — | 59.4 |
| 53.2 | — | — | — | — | — | — | — | — | — | — | — | — | 59.8 |
| 53.4 | — | — | — | — | — | — | — | — | — | — | — | — | 60.1 |

注:1 表中未注明的测区混凝土强度换算值为小于10 MPa或大于60MPa。

2 表中数值是根据曲线方程计算。



# 附录F 泵送高强混凝土测区强度换算表

**表F 泵送高强混凝土测区强度换算表**

|  |  |  |  |
| --- | --- | --- | --- |
| 平均回弹值Rm | 测区混凝土强度换算值(Mpa) | 平均回弹值Rm | 测区混凝土强度换算值(Mpa) |
| 35.8 | 60.1 | 42.4 | 70.4 |
| 36.0 | 60.4 | 42.6 | 70.7 |
| 36.2 | 60.8 | 42.8 | 71.0 |
| 36.4 | 61.1 | 43.0 | 71.3 |
| 36.6 | 61.4 | 43.2 | 71.6 |
| 36.8 | 61.7 | 43.4 | 71.9 |
| 37.0 | 62.0 | 43.6 | 72.3 |
| 37.2 | 62.3 | 43.8 | 72.6 |
| 37.4 | 62.6 | 44.0 | 72.9 |
| 37.6 | 62.9 | 44.2 | 73.2 |
| 37.8 | 63.3 | 44.4 | 73.5 |
| 38.0 | 63.6 | 44.6 | 73.8 |
| 38.2 | 63.9 | 44.8 | 74.1 |
| 38.4 | 64.2 | 45.0 | 74.4 |
| 38.6 | 64.5 | 45.2 | 74.7 |
| 38.8 | 64.8 | 45.4 | 75.0 |
| 39.0 | 65.1 | 45.6 | 75.3 |
| 39.2 | 65.4 | 45.8 | 75.6 |
| 39.4 | 65.7 | 46.0 | 75.9 |
| 39.6 | 66.1 | 46.2 | 76.3 |
| 39.8 | 66.4 | 46.4 | 76.6 |
| 40.0 | 66.7 | 46.6 | 76.9 |
| 40.2 | 67.0 | 46.8 | 77.2 |
| 40.4 | 67.3 | 47.0 | 77.5 |
| 40.6 | 67.6 | 47.2 | 77.8 |
| 40.8 | 67.9 | 47.4 | 78.1 |
| 41.0 | 68.2 | 47.6 | 78.4 |
| 41.2 | 68.5 | 47.8 | 78.7 |
| 41.4 | 68.9 | 48.0 | 79.0 |
| 41.6 | 69.2 | 48.2 | 79.3 |
| 41.8 | 69.5 | 48.4 | 79.6 |
| 42.0 | 69.8 | 48.6 | 79.9 |
| 42.2 | 70.1 | — | — |

注:1 表中未注明的测区混凝土强度换算值为小于60 MPa或大于80MPa。

2 表中数值是根据曲线方程 计算。

# 附录G 地区和专用测强曲线的制定方法

**G.0.1** 制定地区和专用测强曲线的试块应与被测构件在原材料(含品种、规格)、成型工艺、养护方法等方面条件相同。

**G.0.2**  试块的制作、养护应符合下列规定：

1 C10~C60混凝土按最佳配合比设计5个强度等级，每一强度等级不同龄期分别制作不少于6个150mm立方体试块。

2 C60~C80混凝土按最佳配合比设计4个强度等级，每一强度等级不同龄期分别制作不少于9个150mm立方体试块。

3 在成型后的第二天，应将试块移至与被测构件相同条件下养护，试块拆模日期宜与构件的拆模日期相同。

**G.0.3**  试块的测试应符合下列规定：

1 擦净试块表面，以浇筑侧面的两个相对面置于压力机的上下承压板之间，加压（60～120）kN（低强度试件取低值）。

2 在试块保持压力下，用符合本规程第3.1.3条规定的标准状态的回弹仪和本规程4.2.1条规定的操作方法，在试块的两个侧面上分别弹击8个点。

3 从每一试块的12个回弹值中分别剔除1个最大值和1个最小值，以余下的10个回弹值的平均值（计算精确至0.1）作为该试块的平均回弹值。



4 将试块加荷直至破坏，计算试块的抗压强度值 (MPa),精确至0.1 MPa。



5 按本规程4.3条在破坏后的试块边缘测量该试块的平均碳化深度值。

**G.0.4**  地区和专用测强曲线的计算应符合下列规定:

1 地区和专用测强曲线的回归方程式,应按每一试件测得的、和,采用最小二乘法原理计算。



2 回归方程宜采用以下函数关系式:

 (G.0.4-1)

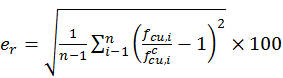


3 用下式计算回归方程式的强度平均相对误差和强度相对标准差,当和均符合第6.3.1条规定时,即可报请上级主管部门审批。



 (G.0.4-2)

 (G.0.4-3)



式中： —回归方程式的强度平均相对误差（％），精确至0.1；



—回归方程式的强度相对标准差（％），精确至0.1；



—由第i个试块抗压试验得出的混凝土抗压强度值（MPa），精确至0.1 MPa；



—由同一试块的平均回弹值 及平均碳化深度值按回归方程式算出的混凝土的强度换算值（MPa），精确至0.1MPa；



n—制定回归方程式的试件数。

# 附录H 回弹法检测混凝土抗压强度报告

编号（ ）第 号 第 页 共 页

委 托 单 位 施 工 单 位

工 程 名 称 混 凝 土 类 型

强 度 等 级 浇 筑 日 期

检 测 原 因 检 测 依 据

环 境 温 度 检 测 日 期

回弹仪 型 号 回弹仪检定证号

检 测 结 果

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 构 件 | | 测区混凝土抗压强度换算值（MPa） | | | 构件现龄期混凝土强度推定值  （MPa） | 备注 |
| 名称 | 编号 | 平均值 | 标准差 | 最小值 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

（有需要说明的问题或表格不够请续页）

批准： 审核：

主检 上岗证书号 主检 上岗证书号

报告日期 年 月 日

# 附录I 回弹法检测混凝土抗压强度记录单

表I.1 混凝土构件位置原始记录单

合同编号： 记录单编号： A-1*（A表示汇总表，1表示第一种类型的构件）*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 工程名称 |  | | | | |
| 工程地址 |  | | | | |
| 构件类型 | *墙柱梁板等，填写一种类型* | | 检测批数 | *该类型构件划分的检测批数量* | |
| 检测批编号 | G1 | G2 | G3 | … | … |
| 构件数量 |  |  |  |  |  |
| 设计等级 |  |  |  |  |  |
| 浇筑日期 |  |  |  |  |  |
| 构件编号 | 构件位置 | | 构件编号 | 构件位置 | |
| 1 |  | | …… |  | |
| 2 |  | | …… |  | |
| 3 |  | | …… |  | |
| 4 |  | | …… |  | |
| 5 |  | | …… |  | |
| 6 |  | | …… |  | |
| 7 |  | | …… |  | |
| 8 |  | | …… |  | |
| 9 |  | | …… |  | |
| 10 |  | | …… |  | |
| …… |  | | …… |  | |
| …… |  | | …… |  | |
| …… |  | | …… |  | |
| 备注 |  | | | | |

记录： 复核： 检测日期：

# 附录I 回弹法检测混凝土抗压强度记录单

表I.2 混凝土构件回弹测区分布及碳化深度测量原始记录单

合同编号： 记录单编号： B-1*（B表示测区分布及碳化深度记录表，*

*1表示A-1中第一个构件）*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 工程名称 | |  | | | | | | | | | | | | | | | | |
| 工程地址 | |  | | | | | | | | | | | | | | | | |
| 构件编号 | | *……* | | | | | | 构件位置 | | | | *对应于表A1中的构件位置、编号* | | | | | | |
| 碳化尺 | | 型 号 | |  | | | | 管理编号 | | | |  | | | 检定证号 | | |  |
| 测区碳化深度di（mm） | | | | | | | | | | | | | | | | | | 构件碳化深度dm（mm） |
| 1 | 2 | | 3 | | 4 | | 5 | | 6 | 7 | | | 8 | 9 | | 10 | |
|  |  | |  | |  | |  | |  |  | | |  |  | |  | |  |
| 构件回弹（碳化）测区位置示意图 | | | | | | | | | | | | | | | | | | |
| *构件回弹（碳化）测区位置示意图，应与现场标记或痕迹基本一致* | | | | | | | | | | | | | | | | | | |
| 检测人员资格证号1 | | | | | |  | | | | | 检测人员资格证号2 | | | | | |  | |
| 备注： | | 表中测区碳化深度值di是该碳化测点连续测量3次结果的平均值，精确至0.25mm。 | | | | | | | | | | | | | | | | |

检测： 复核： 检测日期：

# 附录I 回弹法检测混凝土抗压强度记录单

表I.3 混凝土构件回弹值测量与计算原始记录单

合同编号： 记录单编号： C-1*（C表示回弹值测量及计算表，*

*1表示A-1中第一个构件）*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 工程名称 |  | | | | | | | | | | | | | | | | |
| 工程地址 |  | | | | | | | | | | | | | | | | |
| 构件编号 | *……* | | | 构件位置 | | | | |  | | | | | | | | |
| 设计等级 |  | | | | | | | | 浇筑日期 | | |  | | | | | |
| 测区 | 回弹值Ri | | | | | | | | | | | | | | | Rm | 碳化深度  di（mm） |
| 1 | 2 | 3 | | 4 | | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 |
| 1 |  |  |  | |  | |  |  |  |  |  | |  |  |  |  |  |
| 2 |  |  |  | |  | |  |  |  |  |  | |  |  |  |  |  |
| 3 |  |  |  | |  | |  |  |  |  |  | |  |  |  |  |  |
| … |  |  |  | |  | |  |  |  |  |  | |  |  |  |  |  |
| 9 |  |  |  | |  | |  |  |  |  |  | |  |  |  |  |  |
| 10 |  |  |  | |  | |  |  |  |  |  | |  |  |  |  |  |
| 测面状态 | *侧面/底面* | | | | | 回  弹  仪 | 型号 | |  | | 回弹仪检定证号 | | | | |  | |
| *干澡、光洁* | | | | | 管理编号 | |  | | 检测人员证号1 | | | | |  | |
| 测试角度 | *水平/向上* | | | | | 率定值 | | *使用前/后* | | 检测人员证号2 | | | | |  | |

**构 件 混 凝 土 强 度 计 算 表**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区  项目 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 回弹值 | 测区平均值 |  |  |  |  |  |  |  |  |  |  |
| 角度修正值 |  |  |  |  |  |  |  |  |  |  |
| 角度修正后 |  |  |  |  |  |  |  |  |  |  |
| 浇筑面修正值 |  |  |  |  |  |  |  |  |  |  |
| 浇筑面修正后 |  |  |  |  |  |  |  |  |  |  |
| 碳化深度（mm） | |  |  |  |  |  |  |  |  |  |  |
| 测区强度值（MPa） | |  |  |  |  |  |  |  |  |  |  |
| 比对修正值（MPa） | |  |  |  |  |  |  |  |  |  |  |
| 比对修正后（MPa） | |  |  |  |  |  |  |  |  |  |  |
| 强度计算（MPa） | |  | | | | | | | | | |
| 测区强度换算曲线 | |  | | | | | | | | | |
| 执行标准 | |  | | | | | | | | | |
| 备注： | | | | | | | | | | | |

检测： 复核： 检测日期：

# 本规程用词说明

1 为便于在执行本规程条文时区别对待，对于要求严格程度不同的用词说明如下：

1）表示很严格，非这样做不可的；

正面词采用“必须”；

反面词采用“严禁”。

2）表示严格，在正常情况下均应这样做的：

正面词采用“应”；

反面词采用“不应”或“不得”。

3）表示允许稍有选择，在条件许可时首先应这样做的：

正面词采用“宜”；

反面词采用“不宜”。

4）表示有选择，在一定条件下可以这样做的，采用“可”。

2 条文中指明应按其他有关标准执行的写法有：“应按……执行”或“应符合……规定”。

引用标准名录

1《回弹仪》GB/T 9138

2《回弹仪》JJG 817

3《混凝土结构现场检测技术标准》GB/T 50784

4《钻芯法检测混凝土强度技术规程》JGJ 384

5《混凝土强度检验评定标准》GB/T 50107