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云南省公路工程超声回弹综合法检测混凝土强度技术规程

**Technical Specification for Detecting Strength of Concrete by Ultrasonic-rebound Combined Method of Highway Engineering**

**（征求意见）**

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# 前 言

根据\*\*的要求，由云南省交通运输厅工程质量监督局、云南省建筑科学研究院会同有关单位共同编制完成。

本规程在编制过程中，编制组经广泛调查研究，认真总结实践经验，参考有关国际标准和国外先进标准，并广泛征求意见，最后经审查定稿。

本规程共分6章和6个附录，主要技术内容是：1 总则，2 术语、符号，3 回弹仪，4 混凝土超声波检测仪器，5 测区回弹值和声速值的测量及计算，6 结构混凝土强度推定。

本规程由云南省交通运输厅工程质量监督局负责管理，由云南省建筑科学研究院负责具体技术内容的解释。执行过程中如有意见或建议，请寄送云南省建筑科学研究院（地址：云南省昆明市学府路150号，邮编650000）以供今后修订时参考。

本规程主编单位：云南省建筑科学研究院

云南省交通运输厅工程质量监督局

云南省公路科学技术研究院

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# 1总 则

**1.0.1** 为提高超声回弹综合法在云南地区公路工程检测普通混凝土抗压强度（以下简称混凝土强度）的精度，做到技术先进、安全可靠、经济合理、方便使用，制定本规程。

**1.0.2** 本规程适用于云南地区公路工程混凝土强度的检测。

在正常情况下，混凝土强度的验收和评定应按现行有关国家标准执行。

当对结构中的混凝土有强度检测要求时，可按本规程进行检测，并推定结构混凝土的强度，作为混凝土结构处理的一个依据。

本规程不适用于检测因冻害、化学侵蚀、火灾、高温等已造成表面疏松、剥落的混凝土。

**1.0.3** 使用超声回弹综合法进行检测的人员，应通过专业培训并持有相应的资格证书。

**1.0.4** 超声回弹综合法检测混凝土强度除应遵守本规程外，尚应符合现行有关强制性标准的规定。

# 2术语、符号

## 2.1术语

**2.1.1** 测区 Detecting region

在进行结构或构件混凝土强度检测时确定的检测区域。

**2.1.2** 测点 Detecting point

测区内的检测点。

**2.1.3** 超声回弹综合法 Ultrasonic-rebound combined method

根据实测声速值和回弹值综合推定混凝土强度的方法。本方法采用带波形显示器的低频超声波检测仪，并配置频率为 50～100kHz 的换能器，测量混凝土中的超声波声速值，以及采用弹击锤冲击能量为 2.20J 的混凝土回弹仪，测量回弹值。

**2.1.4** 超声波速度 Velocity of ultrasonic wave

在混凝土中，超声脉冲波单位时间内的传播距离。

**2.1.5** 波幅 Amplitude of wave

超声脉冲波通过混凝土被换能器接收后，由超声波检测仪显示的首波信号的幅度。

**2.1.6** 测区混凝土抗压强度换算值 Conversion value for the compression strength ofconcrete at detecting region

根据测区混凝土中的声速代表值和回弹代表值，通过测强曲线换算所得的该测区现龄期混凝土的抗压强度值。

**2.1.7** 混凝土抗压强度推定值 Inferable value for compression strength of concrete

根据测区混凝土抗压强度换算值推定的结构或构件中现龄期混凝土的抗压强度值。

## 2.2主要符号

*e*r—相对误差；

*f c cu,i* —结构或构件第 *i* 个测区的混凝土抗压强度换算值；

*f* cu,e—结构混凝土抗压强度推定值；

*f* c cu,min—结构或构件最小的测区混凝土抗压强度换算值；

*f* o cu—混凝土立方体试件的抗压强度实测值；

*f*  o cor—混凝土芯样试件的抗压强度实测值；

*li* — 第 *i* 个测点的超声测距；

—结构或构件测区混凝土抗压强度换算值的平均值；

*n* —测区数,测点数，立方体试件数，芯样试件数；

*Ri* —第 *i* 个测点的有效回弹值；

*R* —测区回弹代表值；

*Ra*—修正后的测区回弹代表值；

*Raα* — 测试角度为α时的测区回弹修正值；

— 测量混凝土浇筑顶面或底面时的测区回弹修正值；

—结构或构的测区件测区混凝土抗压强度换算值的标准差；

*T*k *—* 空气的摄氏温度；

*ti* —第 *i* 个测点的声时读数；

*t*0—声时初读数；

*v —* 测区混凝土中声速代表值；

*v*a *—* 修正后的测区混凝土中声速代表值；

*v*k *—* 空气中声速计算值；

*v*o *—* 空气中声速实测值；

*vi —* 第 *i* 点个测点的混凝土中声速值；

*α —* 回弹仪测试角度；

*β —* 超声测试面的声速修正系数；

*η —* 修正系数；

*λ —* 平测声速修正系数。

# 3回弹仪

## 3.1一般规定

**3.1.1** 回弹仪可为数字式的，也可为指针直读式的。

**3.1.2** 回弹仪应具有产品合格证及计量检定证书，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** 回弹仪除应符合现行国家标准《回弹仪》GB/T9138的要求外，尚应符合下列规定：

1 水平弹击时，在弹击锤脱钩瞬间，回弹仪的标称能量应为2.207J；

2 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；

3 在洛氏硬度HRC为60±2的钢砧上，回弹仪的率定值应为80±2；

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。

**3.1.4** 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，应由法定计量检定机构按现行行业标准《混凝土回弹仪》JJG 817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 经保养后在钢砧上的率定值不合格；

5 遭受严重撞击或其他损害。

**3.2.2** 在下列情况之一时，回弹仪应在钢砧上进行率定试验：

1 回弹仪当天使用前后；

2 测试过程中对回弹仪性能有怀疑时。

当回弹仪率定值不在 80±2 范围内时，应按本规程第 3.3 节的要求，对回弹仪进行常规保养后再进行率定。若再次率定仍达不到要求，则应送检定单位检定。

**3.2.3** 回弹仪的率定试验应符合下列规定：

1 率定试验应在室温为（5～35）℃的条件下进行；

2 钢砧表面应干燥、清洁，并稳固地平放在刚度大的物体上；

3 回弹值应取连续向下弹击三次的稳定回弹结果的平均值；

4 率定试验应分四个方向进行，且每个方向弹击前，弹击杆应旋转90度，回弹仪每个方向的回弹平均值均应为80±2。

**3.2.4** 回弹仪率定试验所用的钢砧应每2年送授权计量检定机构检定或校准。

## 3.3保养

**3.3.1** 回弹仪有下列情况之一时，应进行保养：

1 弹击超过 2000 次；

2 在钢砧上的率定值不合格；

3 对检测值有怀疑。

**3.3.2** 回弹仪的保养应符合下列规定：

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，其他零部件均不得抹油。

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3.2.3条的规定进行率定。

**3.3.3** 回弹仪使用完毕后，应使弹击杆伸出机壳，清除弹击杆、杆前端球面、刻度尺表面和外壳上的污垢、尘土。回弹仪不使用时，应将弹击杆压入仪器内，经弹击后用按钮锁住机芯，将回弹仪装入仪器箱，平放在干燥阴凉处。数字式回弹仪长期不用时，应取出电池。

# 4混凝土超声波检测仪器

## 4.1一般规定

**4.1.1** 所采用的混凝土超声波检测仪应通过技术鉴定，必须具有产品合格证和检定证。

**4.1.2** 用于混凝土的超声波检测仪可分为下列两类：

1 模拟式： 接收的信号为连续模拟量，可由时域波形信号测读声学参数；

2 数字式： 接收的信号转化为离散数字量，具有采集、储存数字信号、测读声学参数和对数字信号处理的智能化功能。

**4.1.3** 所采用的超声波检测仪应符合现行行业标准《混凝土超声波检测仪》JG/T 5004 的要求，并在计量检定有效期内使用。

**4.1.4** 超声波检测仪应满足下列要求：

1 具有波形清晰、显示稳定的示波装置；

2 声时最小分度值为 0.1 *μ* s；

3 具有最小分度值为 1dB 的信号幅度调整系统；

4 接收放大器频响范围 10～500kHz，总增益不小于 80dB，接收灵敏度（信噪比 3：1时）不大于 50 *μ* V；

5 电源电压波动范围在标称值±10%情况下能正常工作；

6 连续正常工作时间不少于 4h。

**4.1.5** 模拟式超声波检测仪还应满足下列要求：

1 具有手动游标和自动整形两种声时测读功能；

2 数字显示稳定，声时调节在 20～30 *μ* s 范围内，连续静置 1h 数字变化不超过±0.2 *μ* s。

**4.1.6** 数字式超声波检测仪还应满足下列要求：

1 具有采集、储存数字信号并进行数据处理的功能；

2 具有手动游标测读和自动测读两种方式。当自动测读时，在同一测试条件下，在 1h内每5min 测读一次声时值的差异不超过±0.2 *μ* s；

3 自动测读时，在显示器的接收波形上，有光标指示声时的测读位置。

**4.1.7** 超声波检测仪器使用时，环境温度应为 0～40℃。

## 4.2换能器技术要求

**4.2.1** 换能器的工作频率宜在 50~100kHz 范围内。

**4.2.2** 换能器的实测主频与标称频率相差不应超过±10%。

## 4.3校准和保养

**4.3.1** 超声波检测仪的声时计量检验，应按“时-距”法测量空气中声速实测值 *v*o（附录E），并与按下列公式计算的空气中声速计算值 vk 相比较，二者的相对误差不应超过±0.5%。

Vk= 331.4 （4.3.1）

式中

331.4— 0℃时空气中的声速值（m/s）；

*v*k—温度为*T*k时空气中的声速计算值（m/s）；

*T*k—测试时空气的温度（℃）。

**4.3.2** 检测时，应根据测试需要在仪器上配置合适的换能器和高频电缆线，并测定声时初读数 *t*0。检测过程中如更换换能器或高频电缆线，应重新测定 *t*0。

**4.3.3** 超声波检测仪应定期保养。

# 5检测技术及计算

## 5.1一般规定

**5.1.1** 采用超声回弹综合法检测混凝土强度时宜具备下列资料：

1 工程名称和设计、施工、建设、委托单位名称；

2 结构或构件名称、施工图纸和混凝土设计强度等级；

3 水泥的品种、强度等级和用量，砂石的品种、粒径，外加剂或掺合料的品种、掺量和混凝土配合比等；

4 模板类型，混凝土浇筑、养护情况和成型日期；

5 结构或构件检测原因的说明。

**5.1.2** 回弹仪在检测前后，应在钢砧上做率定试验，并应符合本规程第3.1.3条的规定。

**5.1.3** 混凝土强度可按单个构件或按批量进行检测，并应符合下列规定：

1 按单个构件检测时，应在构件上均匀布置测区，每个构件上测区数量不应少于 10个；

2 同批构件按批抽样检测时，构件抽样数不应少于同批构件的 30%，且不应少于 10 件；对一般施工质量的检测和结构性能的检测，可按照现行国家标准《建筑结构检测技术标准》GB/T50344 的规定抽样。

3 对某一方向尺寸不大于 4.5m 且另一方向尺寸不大于 0.3m 的构件，其测区数量可适当减少，但不应少于 5 个。

**5.1.4** 按批抽样检测时，符合下列条件的构件可作为同批构件：

1 混凝土设计强度等级相同；

2 混凝土原材料、配合比、成型工艺、养护条件和龄期基本相同；

3 构件种类相同；

4 施工阶段所处状态基本相同。

**5.1.5** 构件的测区应符合下列规定：

1 在条件允许时，测区宜优先布置在构件混凝土浇筑方向的侧面；

2 测区可在构件的两个对应面、相邻面或同一面上布置；

3 测区宜均匀布置, 相邻两测区的间距不宜大于 2m；

4 测区应避开钢筋密集区和预埋件；

5 测区尺寸宜为 200 mm×200 mm；采用平测时宜为 400mm×400mm；

6 测试面应清洁、平整、干燥，不应有接缝、施工缝、饰面层、浮浆和油垢，并应避开蜂窝、麻面部位。必要时，可用砂轮片清除杂物和磨平不平整处, 并擦净残留粉尘。

**5.1.6** 结构或构件上的测区应编号，并记录测区位置和外观质量情况。

**5.1.7** 对结构或构件的每一测区，应先进行回弹测试，后进行超声测试。

**5.1.8** 计算混凝土抗压强度换算值时，非同一测区内的回弹值和声速值不得混用。

## 5.2回弹测试及回弹值计算

**5.2.1** 回弹测试时，应始终保持回弹仪的轴线垂直于混凝土测试面。宜选择混凝土浇筑方向的侧面进行水平方向测试。如不具备浇筑方向侧面水平测试的条件，可采用非水平状态测试，或测试混凝土浇筑的顶面或底面。

**5.2.2** 测量回弹值应在构件测区内超声波的发射和接收面各弹击8点；超声波单面平测时，可在超声波的发射和接收测点之间弹击 16 点 。每一测点的回弹值，测读精确度至1。

**5.2.3** 测点在测区范围内宜均匀布置，但不得布置在气孔或外露石子上。相邻两测点的间距不宜小于30mm；测点距构件边缘或外露钢筋、铁件的距离不应小于50 mm，同一测点只允许弹击一次。

**5.2.4** 测区回弹代表值应从该测区的16个回弹值中剔除3个较大值和3个较小值，其余10 个回弹值应按下式计算：

（5.2.4）

式中：

— 测区回弹代表值，取有效测试数据的平均值，精确至0.1；

— 第 i 个测点的有效回弹值。

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

（5.2.5）

式中：

——修正后的测区回弹代表值；

——测试角度为α时的测区回弹修正值，应按本规程附录C取值。

**5.2.6** 水平方向检测混凝土浇筑表面或浇筑底面时，测区的平均回弹值应按下式修正：

（5.2.6-1）

（5.2.6-2）

式中：

——混凝土浇筑顶面、底面回弹值的修正值，应按本规程附录D取值。

**5.2.7** 当回弹仪为非水平方向且测试面为混凝土的非浇筑侧面时，应先对回弹值进行角度修正，然后对修正后的回弹值再进行浇筑面修正。

## 5.3超声测试及声速值计算

**5.3.1** 超声测点应布置在回弹测试的同一测区内，每一测区布置3个测点。超声测试宜优先采用对测或角测，当被测构件不具备对测或角测条件时，可采用单面平测（附录A）。

**5.3.2** 超声测试时，换能器辐射面应通过耦合剂与混凝土测试面良好耦合。

**5.3.3** 声时测量应精确至0.1μs，超声测距测量应精确至1.0mm，且测量误差不应超过±1%。声速计算应精确至0.01km/s。

**5.3.4** 当在混凝土浇筑方向的侧面对测时，测区混凝土声速代表值为该测区中 3 个测点声速值的平均值，应按下式计算：

（5.3.4）

式中

— 测区混凝土中声速代表值（km/s）；

— 第 i 个测点的超声测距（mm），角测时测距按本规程附录A计算；

— 第 i 个测点的声时读数（μs）；

— 声时初读数（μs）。

**5.3.5** 当在混凝土浇筑的顶面或底面测试时，测区声速代表值应按下式修正：

va =β·v （5.3.5）

式中

*va* — 修正后的测区混凝土中声速代表值（km/s）；

*β* — 超声测试面的声速修正系数，在混凝土浇筑的顶面和底面间对测或斜测时，*β*=1.034；在混凝土浇筑的顶面或底面平测时，测区混凝土中声速代表值应按本规程附录A的A.2计算和修正。

# 6混凝土强度的计算

**6.0.1** 本规程规定的强度换算方法适用于符合下列条件的普通混凝土：

1 混凝土采用的水泥、砂、石、外加剂、掺合料、拌和用说应符合云南省和国家现行有关标准规定；

2 采用普通成型工艺；

3 采用符合国家标准规定的模板；

4 人工或一般机械搅拌的混凝土或泵送混凝土；

5 自然养护；

6 龄期 7～360d；

7 混凝土强度 25～70MPa；

**6.0.2** 结构或构件中第*i*个测区的混凝土抗压强度换算值，可按本规程第5.2节和第5.3节的规定求得测区回弹代表值*Rai*和声速代表值*vai*后，由本规程附录B查表或按下式计算得出：

（6.0.2）

**6.0.3** 当结构或构件中的测区数不少于10个时，各测区混凝土抗压强度换算值的平均值和标准差应按下式计算：

（6.0.3-1）

（6.0.3-2）

式中

— 结构或构件第 i 个测区的混凝土抗压强度换算值（MPa）；

— 结构或构件测区混凝土抗压强度换算值的平均值（MPa），精确至 0.1 MPa；

— 结构或构件测区混凝土抗压强度换算值的标准差（MPa），精确至 0.01 MPa；

— 测区数。对单个检测的构件，取一个构件的测区数；对批量检测的构件，取被抽检构件测区数之总和。

**6.0.4** 当结构或构件所采用的材料及其龄期与制定测强曲线所采用的材料及其龄期有较大差异时，应采用同条件立方体试件或从结构或构件测区中钻取的混凝土芯样试件的抗压强度进行修正。试件数量不应少于4个。此时，采用式（6.0.2）计算测区混凝土抗压强度换算值应乘以下列修正系数*η*。

1 用同条件立方体试件修正时：

（6.0.4-1）

2 采用混凝土芯样试件修正时：

（6.0.4-2）

式中

— 修正系数, 精确至小数点后两位；

—对应于第*i*个立方体试件或芯样试件的混凝土抗压强度换算值（MPa）,精确至 0.1MPa；

—第*i*个混凝土立方体（边长150mm）试件的抗压强度实测值（MPa）,精确至0.1MPa；

—第*i*个混凝土芯样（φ100×100mm）试件的抗压强度实测值（MPa），精确至0.1MPa；

n*—* 试件数。

**6.0.5** 结构或构件混凝土抗压强度推定值 *f*cu,e，应按下列规定确定：

1 当结构或构件的测区抗压强度换算值中出现小于25.0MPa 的值时，该构件的混凝土抗压强度推定值*f*cu,e取小于25.0MPa。

2 当结构或构件中测区数少于10个时

（6.0.5-1）

式中：

—结构或构件最小的测区混凝土抗压强度换算值（MPa），精确至0.1MPa。

3 当结构或构件中测区数不少于10个或按批量检测时

（6.0.5-2）

**6.0.6** 对按批量检测的构件，当一批构件的测区混凝土抗压强度标准差出现下列情况之一时，该批构件应全部重新按单个构件进行检测：

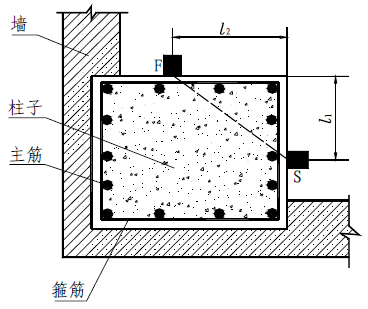
1 一批构件的混凝土抗压强度平均值=25.0~50.0 MPa，标准差>5.50 MPa；

2 一批构件的混凝土抗压强度平均值＞50.0 MPa，标准差>6.50 MPa。

# 附录A 超声波角测、平测和声速计算方法

## A.1超声波角测方法

**A.1.1** 当结构或构件被测部位只有两个相邻表面可供检测时，可采用角测方法测量混凝土中声速。每个测区布置3个测点，换能器布置如图A.1.1 所示。



图A.1.1 超声波角测示意

**A.1.2** 布置超声角测点时，换能器中心与构件边缘的距离*l*1*、l*2不宜小于200mm。

**A.1.3** 角测时超声测距应按下列公式计算：

（A.1.3）

式中：

*l*i——角测第i个测点的超声测距（mm）；

*l*1i、*l*2i——角测第i个测点换能器与构件边缘的距离（mm）。

**A.1.4** 角测时，混凝土中声速代表值应按下列公式计算：

（A.1.4）

式中：

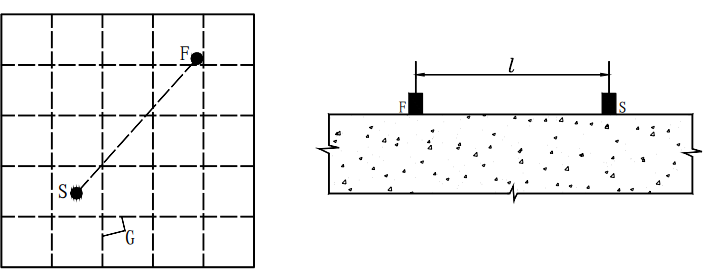
*v—*角测时混凝土中声速代表值（km/s）；

*ti*—角测第i个测点的声时读数（μs）；

*t0*—声时初读数（μs）。

## A.2超声波平测方法

**A.2.1** 当结构或构件被测部位只有一个表面可供检测时，可采用平测方法测量混凝土中声速。每个测区布置 3 个测点。换能器布置如图 A.2.1 所示。



(a) 平面图 (b)立面图

图 A.2.1 超声波平测示意

F－发射换能器； S－接收换能器； G－钢筋轴线

**A.2.2** 布置超声平测点时，宜使发射和接收换能器的连线与附近钢筋轴线成 40～50º，超声测距 *l* 宜采用350～450mm。

**A.2.3** 宜采用同一构件的对测声速 *v*d与平测声速 *v*p之比求得修正系数 *λ* （ *λ* =*v*d/*v*p），对平测声速进行修正。

**A.2.4** 当被测结构或构件不具备对测与平测的对比条件时，宜选取有代表性的部位，以测*l* =200mm、250mm、300mm、350mm、400mm、450mm、500mm，逐点测读相应声时值 *t* ，用回归分析方法求出直线方程 *l =a* + *bt* 。以回归系数 *b* 代替对测声速 *v*d，再按本规程第A.2.3条的规定对各平测声速进行修正。

**A.2.5** 平测时，修正后的混凝土中声速代表值应按下列公式计算：

（A.2.5）

式中：

— 修正后的平测时混凝土中声速代表值（km/s）；

— 平测第 i 个测点的超声测距（mm）；

— 平测第 i 个测点的声时读数（μ s）；

— 平测声速修正系数。

**A.2.6** 平测测点布置在混凝土浇筑的顶面或底面时，需要在前面平测修正的基础上，再乘以测试面的修正系数*β*，修正后的混凝土中声速代表值应按下列公式计算：

（A.2.6）

式中：

— 超声测试面的声速修正系数，顶面平测 =1.05，底面平测 =0.95。

**附录B 测区混凝土抗压强度换算**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值f c cu (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值v（km/s） | | | | | | | | | | | | |
| 3.18 | 3.20 | 3.22 | 3.24 | 3.26 | 3.28 | 3.30 | 3.32 | 3.34 | 3.36 | 3.38 | 3.40 | 3.42 |
| 28.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 28.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 29.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 29.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 30.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 30.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 31.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 31.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 32.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 32.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 33.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 33.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 34.0 | / | / | / | / | / | / | / | / | / | / | / | / | 25.0 |
| 34.5 | / | / | / | / | / | / | / | / | / | / | / | 25.1 | 25.3 |
| 35.0 | / | / | / | / | / | / | / | / | / | 25.0 | 25.2 | 25.4 | 25.7 |
| 35.5 | / | / | / | / | / | / | / | / | 25.1 | 25.3 | 25.5 | 25.8 | 26.0 |
| 36.0 | / | / | / | / | / | / | 25.0 | 25.2 | 25.4 | 25.6 | 25.9 | 26.1 | 26.3 |
| 36.5 | / | / | / | / | / | 25.1 | 25.3 | 25.5 | 25.7 | 25.9 | 26.2 | 26.4 | 26.6 |
| 37.0 | / | / | / | / | 25.2 | 25.4 | 25.6 | 25.8 | 26.0 | 26.2 | 26.5 | 26.7 | 26.9 |
| 37.5 | / | / | 25.0 | 25.3 | 25.5 | 25.7 | 25.9 | 26.1 | 26.3 | 26.5 | 26.8 | 27.0 | 27.2 |
| 38.0 | / | 25.1 | 25.3 | 25.5 | 25.8 | 26.0 | 26.2 | 26.4 | 26.6 | 26.8 | 27.1 | 27.3 | 27.5 |
| 38.5 | 25.2 | 25.4 | 25.6 | 25.8 | 26.0 | 26.3 | 26.5 | 26.7 | 26.9 | 27.1 | 27.4 | 27.6 | 27.8 |
| 39.0 | 25.4 | 25.7 | 25.9 | 26.1 | 26.3 | 26.5 | 26.8 | 27.0 | 27.2 | 27.4 | 27.7 | 27.9 | 28.1 |
| 39.5 | 25.7 | 25.9 | 26.2 | 26.4 | 26.6 | 26.8 | 27.1 | 27.3 | 27.5 | 27.7 | 28.0 | 28.2 | 28.4 |
| 40.0 | 26.0 | 26.2 | 26.4 | 26.7 | 26.9 | 27.1 | 27.4 | 27.6 | 27.8 | 28.0 | 28.3 | 28.5 | 28.7 |
| 40.5 | 26.3 | 26.5 | 26.7 | 27.0 | 27.2 | 27.4 | 27.6 | 27.9 | 28.1 | 28.3 | 28.6 | 28.8 | 29.0 |
| 41.0 | 26.5 | 26.8 | 27.0 | 27.2 | 27.5 | 27.7 | 27.9 | 28.2 | 28.4 | 28.6 | 28.9 | 29.1 | 29.3 |
| 41.5 | 26.8 | 27.1 | 27.3 | 27.5 | 27.8 | 28.0 | 28.2 | 28.5 | 28.7 | 28.9 | 29.2 | 29.4 | 29.6 |
| 42.0 | 27.1 | 27.3 | 27.6 | 27.8 | 28.0 | 28.3 | 28.5 | 28.7 | 29.0 | 29.2 | 29.5 | 29.7 | 29.9 |
| 42.5 | 27.4 | 27.6 | 27.8 | 28.1 | 28.3 | 28.6 | 28.8 | 29.0 | 29.3 | 29.5 | 29.8 | 30.0 | 30.2 |
| 43.0 | 27.6 | 27.9 | 28.1 | 28.4 | 28.6 | 28.8 | 29.1 | 29.3 | 29.6 | 29.8 | 30.1 | 30.3 | 30.5 |
| 43.5 | 27.9 | 28.2 | 28.4 | 28.6 | 28.9 | 29.1 | 29.4 | 29.6 | 29.9 | 30.1 | 30.4 | 30.6 | 30.8 |
| 44.0 | 28.2 | 28.4 | 28.7 | 28.9 | 29.2 | 29.4 | 29.7 | 29.9 | 30.2 | 30.4 | 30.6 | 30.9 | 31.1 |
| 44.5 | 28.5 | 28.7 | 28.9 | 29.2 | 29.4 | 29.7 | 29.9 | 30.2 | 30.4 | 30.7 | 30.9 | 31.2 | 31.4 |
| 45.0 | 28.7 | 29.0 | 29.2 | 29.5 | 29.7 | 30.0 | 30.2 | 30.5 | 30.7 | 31.0 | 31.2 | 31.5 | 31.7 |
| 45.5 | 29.0 | 29.2 | 29.5 | 29.8 | 30.0 | 30.3 | 30.5 | 30.8 | 31.0 | 31.3 | 31.5 | 31.8 | 32.0 |

| 续表B | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值*f c cu* (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值*v*（km/s） | | | | | | | | | | | | |
| 3.18 | 3.20 | 3.22 | 3.24 | 3.26 | 3.28 | 3.30 | 3.32 | 3.34 | 3.36 | 3.38 | 3.40 | 3.42 |
| 46.0 | 29.3 | 29.5 | 29.8 | 30.0 | 30.3 | 30.5 | 30.8 | 31.1 | 31.3 | 31.6 | 31.8 | 32.1 | 32.3 |
| 46.5 | 29.5 | 29.8 | 30.0 | 30.3 | 30.6 | 30.8 | 31.1 | 31.3 | 31.6 | 31.9 | 32.1 | 32.4 | 32.6 |
| 47.0 | 29.8 | 30.1 | 30.3 | 30.6 | 30.8 | 31.1 | 31.4 | 31.6 | 31.9 | 32.1 | 32.4 | 32.7 | 32.9 |
| 47.5 | 30.1 | 30.3 | 30.6 | 30.9 | 31.1 | 31.4 | 31.6 | 31.9 | 32.2 | 32.4 | 32.7 | 33.0 | 33.2 |
| 48.0 | 30.3 | 30.6 | 30.9 | 31.1 | 31.4 | 31.7 | 31.9 | 32.2 | 32.5 | 32.7 | 33.0 | 33.3 | 33.5 |
| 48.5 | 30.6 | 30.9 | 31.1 | 31.4 | 31.7 | 31.9 | 32.2 | 32.5 | 32.7 | 33.0 | 33.3 | 33.6 | 33.8 |
| 49.0 | 30.9 | 31.1 | 31.4 | 31.7 | 31.9 | 32.2 | 32.5 | 32.8 | 33.0 | 33.3 | 33.6 | 33.9 | 34.1 |
| 49.5 | 31.1 | 31.4 | 31.7 | 32.0 | 32.2 | 32.5 | 32.8 | 33.0 | 33.3 | 33.6 | 33.9 | 34.1 | 34.4 |
| 50.0 | 31.4 | 31.7 | 32.0 | 32.2 | 32.5 | 32.8 | 33.1 | 33.3 | 33.6 | 33.9 | 34.2 | 34.4 | 34.7 |
| 50.5 | 31.7 | 31.9 | 32.2 | 32.5 | 32.8 | 33.1 | 33.3 | 33.6 | 33.9 | 34.2 | 34.4 | 34.7 | 35.0 |
| 51.0 | 31.9 | 32.2 | 32.5 | 32.8 | 33.1 | 33.3 | 33.6 | 33.9 | 34.2 | 34.5 | 34.7 | 35.0 | 35.3 |
| 51.5 | 32.2 | 32.5 | 32.8 | 33.0 | 33.3 | 33.6 | 33.9 | 34.2 | 34.5 | 34.7 | 35.0 | 35.3 | 35.6 |
| 52.0 | 32.5 | 32.8 | 33.0 | 33.3 | 33.6 | 33.9 | 34.2 | 34.5 | 34.7 | 35.0 | 35.3 | 35.6 | 35.9 |
| 52.5 | 32.7 | 33.0 | 33.3 | 33.6 | 33.9 | 34.2 | 34.4 | 34.7 | 35.0 | 35.3 | 35.6 | 35.9 | 36.2 |
| 53.0 | 33.0 | 33.3 | 33.6 | 33.9 | 34.1 | 34.4 | 34.7 | 35.0 | 35.3 | 35.6 | 35.9 | 36.2 | 36.5 |
| 53.5 | 33.3 | 33.6 | 33.8 | 34.1 | 34.4 | 34.7 | 35.0 | 35.3 | 35.6 | 35.9 | 36.2 | 36.5 | 36.8 |
| 54.0 | 33.5 | 33.8 | 34.1 | 34.4 | 34.7 | 35.0 | 35.3 | 35.6 | 35.9 | 36.2 | 36.5 | 36.8 | 37.1 |
| 54.5 | 33.8 | 34.1 | 34.4 | 34.7 | 35.0 | 35.3 | 35.6 | 35.9 | 36.1 | 36.4 | 36.7 | 37.0 | 37.3 |
| 55.0 | 34.1 | 34.3 | 34.6 | 34.9 | 35.2 | 35.5 | 35.8 | 36.1 | 36.4 | 36.7 | 37.0 | 37.3 | 37.6 |
| 55.5 | 34.3 | 34.6 | 34.9 | 35.2 | 35.5 | 35.8 | 36.1 | 36.4 | 36.7 | 37.0 | 37.3 | 37.6 | 37.9 |
| 56.0 | 34.6 | 34.9 | 35.2 | 35.5 | 35.8 | 36.1 | 36.4 | 36.7 | 37.0 | 37.3 | 37.6 | 37.9 | 38.2 |
| 56.5 | 34.8 | 35.1 | 35.4 | 35.7 | 36.0 | 36.4 | 36.7 | 37.0 | 37.3 | 37.6 | 37.9 | 38.2 | 38.5 |
| 57.0 | 35.1 | 35.4 | 35.7 | 36.0 | 36.3 | 36.6 | 36.9 | 37.2 | 37.6 | 37.9 | 38.2 | 38.5 | 38.8 |
| 57.5 | 35.4 | 35.7 | 36.0 | 36.3 | 36.6 | 36.9 | 37.2 | 37.5 | 37.8 | 38.1 | 38.5 | 38.8 | 39.1 |
| 58.0 | 35.6 | 35.9 | 36.2 | 36.5 | 36.9 | 37.2 | 37.5 | 37.8 | 38.1 | 38.4 | 38.7 | 39.1 | 39.4 |
| 58.5 | 35.9 | 36.2 | 36.5 | 36.8 | 37.1 | 37.4 | 37.8 | 38.1 | 38.4 | 38.7 | 39.0 | 39.3 | 39.7 |
| 59.0 | 36.1 | 36.5 | 36.8 | 37.1 | 37.4 | 37.7 | 38.0 | 38.3 | 38.7 | 39.0 | 39.3 | 39.6 | 39.9 |
| 59.5 | 36.4 | 36.7 | 37.0 | 37.3 | 37.7 | 38.0 | 38.3 | 38.6 | 38.9 | 39.3 | 39.6 | 39.9 | 40.2 |
| 60.0 | 36.7 | 37.0 | 37.3 | 37.6 | 37.9 | 38.3 | 38.6 | 38.9 | 39.2 | 39.5 | 39.9 | 40.2 | 40.5 |
| 60.5 | 36.9 | 37.2 | 37.6 | 37.9 | 38.2 | 38.5 | 38.8 | 39.2 | 39.5 | 39.8 | 40.1 | 40.5 | 40.8 |
| 61.0 | 37.2 | 37.5 | 37.8 | 38.1 | 38.5 | 38.8 | 39.1 | 39.4 | 39.8 | 40.1 | 40.4 | 40.8 | 41.1 |
| 61.5 | 37.4 | 37.8 | 38.1 | 38.4 | 38.7 | 39.1 | 39.4 | 39.7 | 40.0 | 40.4 | 40.7 | 41.0 | 41.4 |
| 62.0 | 37.7 | 38.0 | 38.3 | 38.7 | 39.0 | 39.3 | 39.7 | 40.0 | 40.3 | 40.7 | 41.0 | 41.3 | 41.7 |
| 62.5 | 37.9 | 38.3 | 38.6 | 38.9 | 39.3 | 39.6 | 39.9 | 40.3 | 40.6 | 40.9 | 41.3 | 41.6 | 41.9 |
| 63.0 | 38.2 | 38.5 | 38.9 | 39.2 | 39.5 | 39.9 | 40.2 | 40.5 | 40.9 | 41.2 | 41.6 | 41.9 | 42.2 |
| 63.5 | 38.5 | 38.8 | 39.1 | 39.5 | 39.8 | 40.1 | 40.5 | 40.8 | 41.2 | 41.5 | 41.8 | 42.2 | 42.5 |
| 64.0 | 38.7 | 39.1 | 39.4 | 39.7 | 40.1 | 40.4 | 40.7 | 41.1 | 41.4 | 41.8 | 42.1 | 42.5 | 42.8 |
| 64.5 | 39.0 | 39.3 | 39.7 | 40.0 | 40.3 | 40.7 | 41.0 | 41.4 | 41.7 | 42.0 | 42.4 | 42.7 | 43.1 |
| 65.0 | 39.2 | 39.6 | 39.9 | 40.3 | 40.6 | 40.9 | 41.3 | 41.6 | 42.0 | 42.3 | 42.7 | 43.0 | 43.4 |
| 65.5 | 39.5 | 39.8 | 40.2 | 40.5 | 40.9 | 41.2 | 41.6 | 41.9 | 42.2 | 42.6 | 42.9 | 43.3 | 43.6 |
| 66.0 | 39.7 | 40.1 | 40.4 | 40.8 | 41.1 | 41.5 | 41.8 | 42.2 | 42.5 | 42.9 | 43.2 | 43.6 | 43.9 |
| 66.5 | 40.0 | 40.3 | 40.7 | 41.0 | 41.4 | 41.7 | 42.1 | 42.4 | 42.8 | 43.1 | 43.5 | 43.9 | 44.2 |
| 67.0 | 40.3 | 40.6 | 41.0 | 41.3 | 41.7 | 42.0 | 42.4 | 42.7 | 43.1 | 43.4 | 43.8 | 44.1 | 44.5 |
| 67.5 | 40.5 | 40.9 | 41.2 | 41.6 | 41.9 | 42.3 | 42.6 | 43.0 | 43.3 | 43.7 | 44.1 | 44.4 | 44.8 |
| 68.0 | 40.8 | 41.1 | 41.5 | 41.8 | 42.2 | 42.5 | 42.9 | 43.3 | 43.6 | 44.0 | 44.3 | 44.7 | 45.1 |
| 68.5 | 41.0 | 41.4 | 41.7 | 42.1 | 42.4 | 42.8 | 43.2 | 43.5 | 43.9 | 44.2 | 44.6 | 45.0 | 45.3 |
| 69.0 | 41.3 | 41.6 | 42.0 | 42.3 | 42.7 | 43.1 | 43.4 | 43.8 | 44.2 | 44.5 | 44.9 | 45.2 | 45.6 |
| 69.5 | 41.5 | 41.9 | 42.2 | 42.6 | 43.0 | 43.3 | 43.7 | 44.1 | 44.4 | 44.8 | 45.2 | 45.5 | 45.9 |
| 70.0 | 41.8 | 42.1 | 42.5 | 42.9 | 43.2 | 43.6 | 44.0 | 44.3 | 44.7 | 45.1 | 45.4 | 45.8 | 46.2 |
| 70.5 | 42.0 | 42.4 | 42.8 | 43.1 | 43.5 | 43.9 | 44.2 | 44.6 | 45.0 | 45.3 | 45.7 | 46.1 | 46.5 |
| 71.0 | 42.3 | 42.6 | 43.0 | 43.4 | 43.8 | 44.1 | 44.5 | 44.9 | 45.2 | 45.6 | 46.0 | 46.4 | 46.7 |
| 71.5 | 42.5 | 42.9 | 43.3 | 43.6 | 44.0 | 44.4 | 44.8 | 45.1 | 45.5 | 45.9 | 46.3 | 46.6 | 47.0 |
| 72.0 | 42.8 | 43.2 | 43.5 | 43.9 | 44.3 | 44.6 | 45.0 | 45.4 | 45.8 | 46.2 | 46.5 | 46.9 | 47.3 |
| 72.5 | 43.0 | 43.4 | 43.8 | 44.2 | 44.5 | 44.9 | 45.3 | 45.7 | 46.0 | 46.4 | 46.8 | 47.2 | 47.6 |
| 73.0 | 43.3 | 43.7 | 44.0 | 44.4 | 44.8 | 45.2 | 45.6 | 45.9 | 46.3 | 46.7 | 47.1 | 47.5 | 47.8 |
| 73.5 | 43.5 | 43.9 | 44.3 | 44.7 | 45.1 | 45.4 | 45.8 | 46.2 | 46.6 | 47.0 | 47.4 | 47.7 | 48.1 |
| 74.0 | 43.8 | 44.2 | 44.6 | 44.9 | 45.3 | 45.7 | 46.1 | 46.5 | 46.9 | 47.2 | 47.6 | 48.0 | 48.4 |
| 74.5 | 44.0 | 44.4 | 44.8 | 45.2 | 45.6 | 46.0 | 46.3 | 46.7 | 47.1 | 47.5 | 47.9 | 48.3 | 48.7 |
| 75.0 | 44.3 | 44.7 | 45.1 | 45.4 | 45.8 | 46.2 | 46.6 | 47.0 | 47.4 | 47.8 | 48.2 | 48.6 | 49.0 |
| 75.5 | 44.5 | 44.9 | 45.3 | 45.7 | 46.1 | 46.5 | 46.9 | 47.3 | 47.7 | 48.0 | 48.4 | 48.8 | 49.2 |
| 76.0 | 44.8 | 45.2 | 45.6 | 46.0 | 46.4 | 46.7 | 47.1 | 47.5 | 47.9 | 48.3 | 48.7 | 49.1 | 49.5 |
| 76.5 | 45.0 | 45.4 | 45.8 | 46.2 | 46.6 | 47.0 | 47.4 | 47.8 | 48.2 | 48.6 | 49.0 | 49.4 | 49.8 |
| 77.0 | 45.3 | 45.7 | 46.1 | 46.5 | 46.9 | 47.3 | 47.7 | 48.1 | 48.5 | 48.9 | 49.3 | 49.7 | 50.1 |
| 77.5 | 45.5 | 45.9 | 46.3 | 46.7 | 47.1 | 47.5 | 47.9 | 48.3 | 48.7 | 49.1 | 49.5 | 49.9 | 50.3 |
| 78.0 | 45.8 | 46.2 | 46.6 | 47.0 | 47.4 | 47.8 | 48.2 | 48.6 | 49.0 | 49.4 | 49.8 | 50.2 | 50.6 |
| 78.5 | 46.0 | 46.4 | 46.8 | 47.2 | 47.6 | 48.0 | 48.4 | 48.9 | 49.3 | 49.7 | 50.1 | 50.5 | 50.9 |
| 79.0 | 46.3 | 46.7 | 47.1 | 47.5 | 47.9 | 48.3 | 48.7 | 49.1 | 49.5 | 49.9 | 50.3 | 50.7 | 51.2 |
| 79.5 | 46.5 | 46.9 | 47.3 | 47.7 | 48.2 | 48.6 | 49.0 | 49.4 | 49.8 | 50.2 | 50.6 | 51.0 | 51.4 |
| 80.0 | 46.8 | 47.2 | 47.6 | 48.0 | 48.4 | 48.8 | 49.2 | 49.6 | 50.1 | 50.5 | 50.9 | 51.3 | 51.7 |
| 80.5 | 47.0 | 47.4 | 47.8 | 48.3 | 48.7 | 49.1 | 49.5 | 49.9 | 50.3 | 50.7 | 51.1 | 51.6 | 52.0 |
| 81.0 | 47.3 | 47.7 | 48.1 | 48.5 | 48.9 | 49.3 | 49.8 | 50.2 | 50.6 | 51.0 | 51.4 | 51.8 | 52.3 |
| 81.5 | 47.5 | 47.9 | 48.4 | 48.8 | 49.2 | 49.6 | 50.0 | 50.4 | 50.8 | 51.3 | 51.7 | 52.1 | 52.5 |
| 82.0 | 47.8 | 48.2 | 48.6 | 49.0 | 49.4 | 49.9 | 50.3 | 50.7 | 51.1 | 51.5 | 52.0 | 52.4 | 52.8 |
| 82.5 | 48.0 | 48.4 | 48.9 | 49.3 | 49.7 | 50.1 | 50.5 | 51.0 | 51.4 | 51.8 | 52.2 | 52.6 | 53.1 |
| 83.0 | 48.3 | 48.7 | 49.1 | 49.5 | 49.9 | 50.4 | 50.8 | 51.2 | 51.6 | 52.1 | 52.5 | 52.9 | 53.3 |
| 83.5 | 48.5 | 48.9 | 49.4 | 49.8 | 50.2 | 50.6 | 51.0 | 51.5 | 51.9 | 52.3 | 52.8 | 53.2 | 53.6 |
| 84.0 | 48.8 | 49.2 | 49.6 | 50.0 | 50.5 | 50.9 | 51.3 | 51.7 | 52.2 | 52.6 | 53.0 | 53.5 | 53.9 |
| 84.5 | 49.0 | 49.4 | 49.9 | 50.3 | 50.7 | 51.1 | 51.6 | 52.0 | 52.4 | 52.9 | 53.3 | 53.7 | 54.2 |
| 85.0 | 49.3 | 49.7 | 50.1 | 50.5 | 51.0 | 51.4 | 51.8 | 52.3 | 52.7 | 53.1 | 53.6 | 54.0 | 54.4 |
| 85.5 | 49.5 | 49.9 | 50.4 | 50.8 | 51.2 | 51.7 | 52.1 | 52.5 | 53.0 | 53.4 | 53.8 | 54.3 | 54.7 |
| 86.0 | 49.7 | 50.2 | 50.6 | 51.0 | 51.5 | 51.9 | 52.3 | 52.8 | 53.2 | 53.7 | 54.1 | 54.5 | 55.0 |
| 86.5 | 50.0 | 50.4 | 50.9 | 51.3 | 51.7 | 52.2 | 52.6 | 53.0 | 53.5 | 53.9 | 54.4 | 54.8 | 55.2 |
| 87.0 | 50.2 | 50.7 | 51.1 | 51.5 | 52.0 | 52.4 | 52.9 | 53.3 | 53.7 | 54.2 | 54.6 | 55.1 | 55.5 |
| 87.5 | 50.5 | 50.9 | 51.4 | 51.8 | 52.2 | 52.7 | 53.1 | 53.6 | 54.0 | 54.4 | 54.9 | 55.3 | 55.8 |
| 88.0 | 50.7 | 51.2 | 51.6 | 52.0 | 52.5 | 52.9 | 53.4 | 53.8 | 54.3 | 54.7 | 55.2 | 55.6 | 56.1 |
| 88.5 | 51.0 | 51.4 | 51.8 | 52.3 | 52.7 | 53.2 | 53.6 | 54.1 | 54.5 | 55.0 | 55.4 | 55.9 | 56.3 |
| 89.0 | 51.2 | 51.7 | 52.1 | 52.5 | 53.0 | 53.4 | 53.9 | 54.3 | 54.8 | 55.2 | 55.7 | 56.1 | 56.6 |
| 89.5 | 51.5 | 51.9 | 52.3 | 52.8 | 53.2 | 53.7 | 54.1 | 54.6 | 55.0 | 55.5 | 56.0 | 56.4 | 56.9 |
| 90.0 | 51.7 | 52.1 | 52.6 | 53.0 | 53.5 | 53.9 | 54.4 | 54.9 | 55.3 | 55.8 | 56.2 | 56.7 | 57.1 |

| 续表B | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值*f c cu* (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值*v*（km/s） | | | | | | | | | | | | |
| 3.44 | 3.46 | 3.48 | 3.50 | 3.52 | 3.54 | 3.56 | 3.58 | 3.60 | 3.62 | 3.64 | 3.66 | 3.68 |
| 28.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 28.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 29.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 29.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 30.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 30.5 | / | / | / | / | / | / | / | / | / | / | / | 25.1 | 25.3 |
| 31.0 | / | / | / | / | / | / | / | / | / | 25.0 | 25.2 | 25.4 | 25.6 |
| 31.5 | / | / | / | / | / | / | / | / | 25.2 | 25.4 | 25.6 | 25.8 | 26.0 |
| 32.0 | / | / | / | / | / | / | 25.1 | 25.3 | 25.5 | 25.7 | 25.9 | 26.1 | 26.3 |
| 32.5 | / | / | / | / | 25.1 | 25.3 | 25.5 | 25.7 | 25.9 | 26.1 | 26.3 | 26.4 | 26.6 |
| 33.0 | / | / | / | 25.2 | 25.4 | 25.6 | 25.8 | 26.0 | 26.2 | 26.4 | 26.6 | 26.8 | 27.0 |
| 33.5 | / | 25.1 | 25.3 | 25.5 | 25.7 | 25.9 | 26.1 | 26.3 | 26.5 | 26.7 | 26.9 | 27.1 | 27.3 |
| 34.0 | 25.2 | 25.4 | 25.6 | 25.8 | 26.0 | 26.2 | 26.5 | 26.7 | 26.9 | 27.1 | 27.3 | 27.5 | 27.7 |
| 34.5 | 25.5 | 25.8 | 26.0 | 26.2 | 26.4 | 26.6 | 26.8 | 27.0 | 27.2 | 27.4 | 27.6 | 27.8 | 28.0 |
| 35.0 | 25.9 | 26.1 | 26.3 | 26.5 | 26.7 | 26.9 | 27.1 | 27.3 | 27.5 | 27.7 | 28.0 | 28.2 | 28.4 |
| 35.5 | 26.2 | 26.4 | 26.6 | 26.8 | 27.0 | 27.2 | 27.4 | 27.7 | 27.9 | 28.1 | 28.3 | 28.5 | 28.7 |
| 36.0 | 26.5 | 26.7 | 26.9 | 27.1 | 27.3 | 27.6 | 27.8 | 28.0 | 28.2 | 28.4 | 28.6 | 28.8 | 29.1 |
| 36.5 | 26.8 | 27.0 | 27.2 | 27.4 | 27.7 | 27.9 | 28.1 | 28.3 | 28.5 | 28.7 | 29.0 | 29.2 | 29.4 |
| 37.0 | 27.1 | 27.3 | 27.5 | 27.8 | 28.0 | 28.2 | 28.4 | 28.6 | 28.9 | 29.1 | 29.3 | 29.5 | 29.7 |
| 37.5 | 27.4 | 27.6 | 27.9 | 28.1 | 28.3 | 28.5 | 28.7 | 29.0 | 29.2 | 29.4 | 29.6 | 29.9 | 30.1 |
| 38.0 | 27.7 | 28.0 | 28.2 | 28.4 | 28.6 | 28.8 | 29.1 | 29.3 | 29.5 | 29.7 | 30.0 | 30.2 | 30.4 |
| 38.5 | 28.0 | 28.3 | 28.5 | 28.7 | 28.9 | 29.2 | 29.4 | 29.6 | 29.8 | 30.1 | 30.3 | 30.5 | 30.8 |
| 39.0 | 28.3 | 28.6 | 28.8 | 29.0 | 29.3 | 29.5 | 29.7 | 29.9 | 30.2 | 30.4 | 30.6 | 30.9 | 31.1 |
| 39.5 | 28.7 | 28.9 | 29.1 | 29.3 | 29.6 | 29.8 | 30.0 | 30.3 | 30.5 | 30.7 | 31.0 | 31.2 | 31.4 |
| 40.0 | 29.0 | 29.2 | 29.4 | 29.7 | 29.9 | 30.1 | 30.4 | 30.6 | 30.8 | 31.1 | 31.3 | 31.5 | 31.8 |
| 40.5 | 29.3 | 29.5 | 29.7 | 30.0 | 30.2 | 30.4 | 30.7 | 30.9 | 31.2 | 31.4 | 31.6 | 31.9 | 32.1 |
| 41.0 | 29.6 | 29.8 | 30.0 | 30.3 | 30.5 | 30.8 | 31.0 | 31.2 | 31.5 | 31.7 | 32.0 | 32.2 | 32.4 |
| 41.5 | 29.9 | 30.1 | 30.4 | 30.6 | 30.8 | 31.1 | 31.3 | 31.6 | 31.8 | 32.1 | 32.3 | 32.5 | 32.8 |
| 42.0 | 30.2 | 30.4 | 30.7 | 30.9 | 31.2 | 31.4 | 31.6 | 31.9 | 32.1 | 32.4 | 32.6 | 32.9 | 33.1 |
| 42.5 | 30.5 | 30.7 | 31.0 | 31.2 | 31.5 | 31.7 | 32.0 | 32.2 | 32.5 | 32.7 | 33.0 | 33.2 | 33.5 |
| 43.0 | 30.8 | 31.0 | 31.3 | 31.5 | 31.8 | 32.0 | 32.3 | 32.5 | 32.8 | 33.0 | 33.3 | 33.5 | 33.8 |
| 43.5 | 31.1 | 31.3 | 31.6 | 31.8 | 32.1 | 32.3 | 32.6 | 32.9 | 33.1 | 33.4 | 33.6 | 33.9 | 34.1 |
| 44.0 | 31.4 | 31.7 | 31.9 | 32.2 | 32.4 | 32.7 | 32.9 | 33.2 | 33.4 | 33.7 | 33.9 | 34.2 | 34.5 |
| 44.5 | 31.7 | 32.0 | 32.2 | 32.5 | 32.7 | 33.0 | 33.2 | 33.5 | 33.7 | 34.0 | 34.3 | 34.5 | 34.8 |
| 45.0 | 32.0 | 32.3 | 32.5 | 32.8 | 33.0 | 33.3 | 33.5 | 33.8 | 34.1 | 34.3 | 34.6 | 34.9 | 35.1 |
| 45.5 | 32.3 | 32.6 | 32.8 | 33.1 | 33.3 | 33.6 | 33.9 | 34.1 | 34.4 | 34.7 | 34.9 | 35.2 | 35.4 |
| 46.0 | 32.6 | 32.9 | 33.1 | 33.4 | 33.7 | 33.9 | 34.2 | 34.4 | 34.7 | 35.0 | 35.2 | 35.5 | 35.8 |
| 46.5 | 32.9 | 33.2 | 33.4 | 33.7 | 34.0 | 34.2 | 34.5 | 34.8 | 35.0 | 35.3 | 35.6 | 35.8 | 36.1 |
| 47.0 | 33.2 | 33.5 | 33.7 | 34.0 | 34.3 | 34.5 | 34.8 | 35.1 | 35.3 | 35.6 | 35.9 | 36.2 | 36.4 |
| 47.5 | 33.5 | 33.8 | 34.0 | 34.3 | 34.6 | 34.9 | 35.1 | 35.4 | 35.7 | 35.9 | 36.2 | 36.5 | 36.8 |
| 48.0 | 33.8 | 34.1 | 34.3 | 34.6 | 34.9 | 35.2 | 35.4 | 35.7 | 36.0 | 36.3 | 36.5 | 36.8 | 37.1 |
| 48.5 | 34.1 | 34.4 | 34.6 | 34.9 | 35.2 | 35.5 | 35.7 | 36.0 | 36.3 | 36.6 | 36.9 | 37.1 | 37.4 |
| 49.0 | 34.4 | 34.7 | 35.0 | 35.2 | 35.5 | 35.8 | 36.1 | 36.3 | 36.6 | 36.9 | 37.2 | 37.5 | 37.7 |
| 49.5 | 34.7 | 35.0 | 35.3 | 35.5 | 35.8 | 36.1 | 36.4 | 36.7 | 36.9 | 37.2 | 37.5 | 37.8 | 38.1 |
| 50.0 | 35.0 | 35.3 | 35.6 | 35.8 | 36.1 | 36.4 | 36.7 | 37.0 | 37.3 | 37.5 | 37.8 | 38.1 | 38.4 |
| 50.5 | 35.3 | 35.6 | 35.9 | 36.1 | 36.4 | 36.7 | 37.0 | 37.3 | 37.6 | 37.9 | 38.1 | 38.4 | 38.7 |
| 51.0 | 35.6 | 35.9 | 36.2 | 36.4 | 36.7 | 37.0 | 37.3 | 37.6 | 37.9 | 38.2 | 38.5 | 38.8 | 39.0 |
| 51.5 | 35.9 | 36.2 | 36.5 | 36.7 | 37.0 | 37.3 | 37.6 | 37.9 | 38.2 | 38.5 | 38.8 | 39.1 | 39.4 |
| 52.0 | 36.2 | 36.5 | 36.8 | 37.0 | 37.3 | 37.6 | 37.9 | 38.2 | 38.5 | 38.8 | 39.1 | 39.4 | 39.7 |
| 52.5 | 36.5 | 36.8 | 37.1 | 37.3 | 37.6 | 37.9 | 38.2 | 38.5 | 38.8 | 39.1 | 39.4 | 39.7 | 40.0 |
| 53.0 | 36.8 | 37.1 | 37.4 | 37.7 | 37.9 | 38.2 | 38.5 | 38.8 | 39.1 | 39.4 | 39.7 | 40.0 | 40.3 |
| 53.5 | 37.1 | 37.4 | 37.7 | 38.0 | 38.3 | 38.5 | 38.8 | 39.1 | 39.5 | 39.8 | 40.1 | 40.4 | 40.7 |
| 54.0 | 37.4 | 37.7 | 38.0 | 38.3 | 38.6 | 38.9 | 39.2 | 39.5 | 39.8 | 40.1 | 40.4 | 40.7 | 41.0 |
| 54.5 | 37.6 | 37.9 | 38.2 | 38.6 | 38.9 | 39.2 | 39.5 | 39.8 | 40.1 | 40.4 | 40.7 | 41.0 | 41.3 |
| 55.0 | 37.9 | 38.2 | 38.5 | 38.9 | 39.2 | 39.5 | 39.8 | 40.1 | 40.4 | 40.7 | 41.0 | 41.3 | 41.6 |
| 55.5 | 38.2 | 38.5 | 38.8 | 39.2 | 39.5 | 39.8 | 40.1 | 40.4 | 40.7 | 41.0 | 41.3 | 41.6 | 41.9 |
| 56.0 | 38.5 | 38.8 | 39.1 | 39.4 | 39.8 | 40.1 | 40.4 | 40.7 | 41.0 | 41.3 | 41.6 | 42.0 | 42.3 |
| 56.5 | 38.8 | 39.1 | 39.4 | 39.7 | 40.1 | 40.4 | 40.7 | 41.0 | 41.3 | 41.6 | 42.0 | 42.3 | 42.6 |
| 57.0 | 39.1 | 39.4 | 39.7 | 40.0 | 40.4 | 40.7 | 41.0 | 41.3 | 41.6 | 41.9 | 42.3 | 42.6 | 42.9 |
| 57.5 | 39.4 | 39.7 | 40.0 | 40.3 | 40.7 | 41.0 | 41.3 | 41.6 | 41.9 | 42.3 | 42.6 | 42.9 | 43.2 |
| 58.0 | 39.7 | 40.0 | 40.3 | 40.6 | 41.0 | 41.3 | 41.6 | 41.9 | 42.2 | 42.6 | 42.9 | 43.2 | 43.5 |
| 58.5 | 40.0 | 40.3 | 40.6 | 40.9 | 41.3 | 41.6 | 41.9 | 42.2 | 42.6 | 42.9 | 43.2 | 43.5 | 43.9 |
| 59.0 | 40.3 | 40.6 | 40.9 | 41.2 | 41.6 | 41.9 | 42.2 | 42.5 | 42.9 | 43.2 | 43.5 | 43.8 | 44.2 |
| 59.5 | 40.6 | 40.9 | 41.2 | 41.5 | 41.9 | 42.2 | 42.5 | 42.8 | 43.2 | 43.5 | 43.8 | 44.2 | 44.5 |
| 60.0 | 40.8 | 41.2 | 41.5 | 41.8 | 42.2 | 42.5 | 42.8 | 43.1 | 43.5 | 43.8 | 44.1 | 44.5 | 44.8 |
| 60.5 | 41.1 | 41.5 | 41.8 | 42.1 | 42.5 | 42.8 | 43.1 | 43.5 | 43.8 | 44.1 | 44.5 | 44.8 | 45.1 |
| 61.0 | 41.4 | 41.8 | 42.1 | 42.4 | 42.8 | 43.1 | 43.4 | 43.8 | 44.1 | 44.4 | 44.8 | 45.1 | 45.4 |
| 61.5 | 41.7 | 42.0 | 42.4 | 42.7 | 43.0 | 43.4 | 43.7 | 44.1 | 44.4 | 44.7 | 45.1 | 45.4 | 45.8 |
| 62.0 | 42.0 | 42.3 | 42.7 | 43.0 | 43.3 | 43.7 | 44.0 | 44.4 | 44.7 | 45.0 | 45.4 | 45.7 | 46.1 |
| 62.5 | 42.3 | 42.6 | 43.0 | 43.3 | 43.6 | 44.0 | 44.3 | 44.7 | 45.0 | 45.4 | 45.7 | 46.0 | 46.4 |
| 63.0 | 42.6 | 42.9 | 43.3 | 43.6 | 43.9 | 44.3 | 44.6 | 45.0 | 45.3 | 45.7 | 46.0 | 46.4 | 46.7 |
| 63.5 | 42.9 | 43.2 | 43.5 | 43.9 | 44.2 | 44.6 | 44.9 | 45.3 | 45.6 | 46.0 | 46.3 | 46.7 | 47.0 |
| 64.0 | 43.1 | 43.5 | 43.8 | 44.2 | 44.5 | 44.9 | 45.2 | 45.6 | 45.9 | 46.3 | 46.6 | 47.0 | 47.3 |
| 64.5 | 43.4 | 43.8 | 44.1 | 44.5 | 44.8 | 45.2 | 45.5 | 45.9 | 46.2 | 46.6 | 46.9 | 47.3 | 47.6 |
| 65.0 | 43.7 | 44.1 | 44.4 | 44.8 | 45.1 | 45.5 | 45.8 | 46.2 | 46.5 | 46.9 | 47.2 | 47.6 | 48.0 |
| 65.5 | 44.0 | 44.3 | 44.7 | 45.1 | 45.4 | 45.8 | 46.1 | 46.5 | 46.8 | 47.2 | 47.6 | 47.9 | 48.3 |
| 66.0 | 44.3 | 44.6 | 45.0 | 45.3 | 45.7 | 46.1 | 46.4 | 46.8 | 47.1 | 47.5 | 47.9 | 48.2 | 48.6 |
| 66.5 | 44.6 | 44.9 | 45.3 | 45.6 | 46.0 | 46.4 | 46.7 | 47.1 | 47.4 | 47.8 | 48.2 | 48.5 | 48.9 |
| 67.0 | 44.8 | 45.2 | 45.6 | 45.9 | 46.3 | 46.7 | 47.0 | 47.4 | 47.7 | 48.1 | 48.5 | 48.8 | 49.2 |
| 67.5 | 45.1 | 45.5 | 45.9 | 46.2 | 46.6 | 46.9 | 47.3 | 47.7 | 48.0 | 48.4 | 48.8 | 49.1 | 49.5 |
| 68.0 | 45.4 | 45.8 | 46.1 | 46.5 | 46.9 | 47.2 | 47.6 | 48.0 | 48.3 | 48.7 | 49.1 | 49.5 | 49.8 |
| 68.5 | 45.7 | 46.1 | 46.4 | 46.8 | 47.2 | 47.5 | 47.9 | 48.3 | 48.6 | 49.0 | 49.4 | 49.8 | 50.1 |
| 69.0 | 46.0 | 46.3 | 46.7 | 47.1 | 47.5 | 47.8 | 48.2 | 48.6 | 48.9 | 49.3 | 49.7 | 50.1 | 50.5 |
| 69.5 | 46.3 | 46.6 | 47.0 | 47.4 | 47.7 | 48.1 | 48.5 | 48.9 | 49.2 | 49.6 | 50.0 | 50.4 | 50.8 |
| 70.0 | 46.5 | 46.9 | 47.3 | 47.7 | 48.0 | 48.4 | 48.8 | 49.2 | 49.5 | 49.9 | 50.3 | 50.7 | 51.1 |
| 70.5 | 46.8 | 47.2 | 47.6 | 48.0 | 48.3 | 48.7 | 49.1 | 49.5 | 49.8 | 50.2 | 50.6 | 51.0 | 51.4 |
| 71.0 | 47.1 | 47.5 | 47.9 | 48.2 | 48.6 | 49.0 | 49.4 | 49.8 | 50.1 | 50.5 | 50.9 | 51.3 | 51.7 |
| 71.5 | 47.4 | 47.8 | 48.1 | 48.5 | 48.9 | 49.3 | 49.7 | 50.1 | 50.4 | 50.8 | 51.2 | 51.6 | 52.0 |
| 72.0 | 47.7 | 48.1 | 48.4 | 48.8 | 49.2 | 49.6 | 50.0 | 50.4 | 50.7 | 51.1 | 51.5 | 51.9 | 52.3 |
| 72.5 | 48.0 | 48.3 | 48.7 | 49.1 | 49.5 | 49.9 | 50.3 | 50.7 | 51.0 | 51.4 | 51.8 | 52.2 | 52.6 |
| 73.0 | 48.2 | 48.6 | 49.0 | 49.4 | 49.8 | 50.2 | 50.6 | 51.0 | 51.3 | 51.7 | 52.1 | 52.5 | 52.9 |
| 73.5 | 48.5 | 48.9 | 49.3 | 49.7 | 50.1 | 50.5 | 50.9 | 51.2 | 51.6 | 52.0 | 52.4 | 52.8 | 53.2 |
| 74.0 | 48.8 | 49.2 | 49.6 | 50.0 | 50.4 | 50.8 | 51.1 | 51.5 | 51.9 | 52.3 | 52.7 | 53.1 | 53.5 |
| 74.5 | 49.1 | 49.5 | 49.9 | 50.3 | 50.6 | 51.0 | 51.4 | 51.8 | 52.2 | 52.6 | 53.0 | 53.4 | 53.8 |
| 75.0 | 49.3 | 49.7 | 50.1 | 50.5 | 50.9 | 51.3 | 51.7 | 52.1 | 52.5 | 52.9 | 53.3 | 53.7 | 54.1 |
| 75.5 | 49.6 | 50.0 | 50.4 | 50.8 | 51.2 | 51.6 | 52.0 | 52.4 | 52.8 | 53.2 | 53.6 | 54.0 | 54.5 |
| 76.0 | 49.9 | 50.3 | 50.7 | 51.1 | 51.5 | 51.9 | 52.3 | 52.7 | 53.1 | 53.5 | 53.9 | 54.3 | 54.8 |
| 76.5 | 50.2 | 50.6 | 51.0 | 51.4 | 51.8 | 52.2 | 52.6 | 53.0 | 53.4 | 53.8 | 54.2 | 54.7 | 55.1 |
| 77.0 | 50.5 | 50.9 | 51.3 | 51.7 | 52.1 | 52.5 | 52.9 | 53.3 | 53.7 | 54.1 | 54.5 | 55.0 | 55.4 |
| 77.5 | 50.7 | 51.1 | 51.6 | 52.0 | 52.4 | 52.8 | 53.2 | 53.6 | 54.0 | 54.4 | 54.8 | 55.3 | 55.7 |
| 78.0 | 51.0 | 51.4 | 51.8 | 52.2 | 52.7 | 53.1 | 53.5 | 53.9 | 54.3 | 54.7 | 55.1 | 55.6 | 56.0 |
| 78.5 | 51.3 | 51.7 | 52.1 | 52.5 | 52.9 | 53.4 | 53.8 | 54.2 | 54.6 | 55.0 | 55.4 | 55.9 | 56.3 |
| 79.0 | 51.6 | 52.0 | 52.4 | 52.8 | 53.2 | 53.6 | 54.1 | 54.5 | 54.9 | 55.3 | 55.7 | 56.2 | 56.6 |
| 79.5 | 51.8 | 52.3 | 52.7 | 53.1 | 53.5 | 53.9 | 54.4 | 54.8 | 55.2 | 55.6 | 56.0 | 56.5 | 56.9 |
| 80.0 | 52.1 | 52.5 | 53.0 | 53.4 | 53.8 | 54.2 | 54.6 | 55.1 | 55.5 | 55.9 | 56.3 | 56.8 | 57.2 |
| 80.5 | 52.4 | 52.8 | 53.2 | 53.7 | 54.1 | 54.5 | 54.9 | 55.4 | 55.8 | 56.2 | 56.6 | 57.1 | 57.5 |
| 81.0 | 52.7 | 53.1 | 53.5 | 53.9 | 54.4 | 54.8 | 55.2 | 55.6 | 56.1 | 56.5 | 56.9 | 57.4 | 57.8 |
| 81.5 | 53.0 | 53.4 | 53.8 | 54.2 | 54.7 | 55.1 | 55.5 | 55.9 | 56.4 | 56.8 | 57.2 | 57.7 | 58.1 |
| 82.0 | 53.2 | 53.7 | 54.1 | 54.5 | 54.9 | 55.4 | 55.8 | 56.2 | 56.7 | 57.1 | 57.5 | 58.0 | 58.4 |
| 82.5 | 53.5 | 53.9 | 54.4 | 54.8 | 55.2 | 55.7 | 56.1 | 56.5 | 57.0 | 57.4 | 57.8 | 58.3 | 58.7 |
| 83.0 | 53.8 | 54.2 | 54.6 | 55.1 | 55.5 | 55.9 | 56.4 | 56.8 | 57.2 | 57.7 | 58.1 | 58.6 | 59.0 |
| 83.5 | 54.1 | 54.5 | 54.9 | 55.4 | 55.8 | 56.2 | 56.7 | 57.1 | 57.5 | 58.0 | 58.4 | 58.9 | 59.3 |
| 84.0 | 54.3 | 54.8 | 55.2 | 55.6 | 56.1 | 56.5 | 56.9 | 57.4 | 57.8 | 58.3 | 58.7 | 59.2 | 59.6 |
| 84.5 | 54.6 | 55.0 | 55.5 | 55.9 | 56.4 | 56.8 | 57.2 | 57.7 | 58.1 | 58.6 | 59.0 | 59.5 | 59.9 |
| 85.0 | 54.9 | 55.3 | 55.8 | 56.2 | 56.6 | 57.1 | 57.5 | 58.0 | 58.4 | 58.9 | 59.3 | 59.8 | 60.2 |
| 85.5 | 55.1 | 55.6 | 56.0 | 56.5 | 56.9 | 57.4 | 57.8 | 58.3 | 58.7 | 59.2 | 59.6 | 60.1 | 60.5 |
| 86.0 | 55.4 | 55.9 | 56.3 | 56.8 | 57.2 | 57.6 | 58.1 | 58.5 | 59.0 | 59.4 | 59.9 | 60.4 | 60.8 |
| 86.5 | 55.7 | 56.1 | 56.6 | 57.0 | 57.5 | 57.9 | 58.4 | 58.8 | 59.3 | 59.7 | 60.2 | 60.7 | 61.1 |
| 87.0 | 56.0 | 56.4 | 56.9 | 57.3 | 57.8 | 58.2 | 58.7 | 59.1 | 59.6 | 60.0 | 60.5 | 60.9 | 61.4 |
| 87.5 | 56.2 | 56.7 | 57.1 | 57.6 | 58.0 | 58.5 | 59.0 | 59.4 | 59.9 | 60.3 | 60.8 | 61.2 | 61.7 |
| 88.0 | 56.5 | 57.0 | 57.4 | 57.9 | 58.3 | 58.8 | 59.2 | 59.7 | 60.2 | 60.6 | 61.1 | 61.5 | 62.0 |
| 88.5 | 56.8 | 57.2 | 57.7 | 58.2 | 58.6 | 59.1 | 59.5 | 60.0 | 60.4 | 60.9 | 61.4 | 61.8 | 62.3 |
| 89.0 | 57.1 | 57.5 | 58.0 | 58.4 | 58.9 | 59.3 | 59.8 | 60.3 | 60.7 | 61.2 | 61.7 | 62.1 | 62.6 |
| 89.5 | 57.3 | 57.8 | 58.2 | 58.7 | 59.2 | 59.6 | 60.1 | 60.6 | 61.0 | 61.5 | 62.0 | 62.4 | 62.9 |
| 90.0 | 57.6 | 58.1 | 58.5 | 59.0 | 59.4 | 59.9 | 60.4 | 60.8 | 61.3 | 61.8 | 62.3 | 62.7 | 63.2 |

| 续表B | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值*f c cu* (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值*v*（km/s） | | | | | | | | | | | | |
| 3.70 | 3.72 | 3.74 | 3.76 | 3.78 | 3.80 | 3.82 | 3.84 | 3.86 | 3.88 | 3.90 | 3.92 | 3.94 |
| 28.0 | / | / | / | / | / | / | / | / | 25.1 | 25.3 | 25.4 | 25.6 | 25.8 |
| 28.5 | / | / | / | / | / | / | 25.1 | 25.3 | 25.5 | 25.6 | 25.8 | 26.0 | 26.2 |
| 29.0 | / | / | / | / | 25.1 | 25.3 | 25.5 | 25.7 | 25.8 | 26.0 | 26.2 | 26.4 | 26.6 |
| 29.5 | / | / | 25.1 | 25.3 | 25.5 | 25.7 | 25.8 | 26.0 | 26.2 | 26.4 | 26.6 | 26.8 | 27.0 |
| 30.0 | 25.1 | 25.3 | 25.5 | 25.6 | 25.8 | 26.0 | 26.2 | 26.4 | 26.6 | 26.8 | 27.0 | 27.2 | 27.4 |
| 30.5 | 25.4 | 25.6 | 25.8 | 26.0 | 26.2 | 26.4 | 26.6 | 26.8 | 27.0 | 27.2 | 27.3 | 27.5 | 27.7 |
| 31.0 | 25.8 | 26.0 | 26.2 | 26.4 | 26.6 | 26.8 | 27.0 | 27.1 | 27.3 | 27.5 | 27.7 | 27.9 | 28.1 |
| 31.5 | 26.1 | 26.3 | 26.5 | 26.7 | 26.9 | 27.1 | 27.3 | 27.5 | 27.7 | 27.9 | 28.1 | 28.3 | 28.5 |
| 32.0 | 26.5 | 26.7 | 26.9 | 27.1 | 27.3 | 27.5 | 27.7 | 27.9 | 28.1 | 28.3 | 28.5 | 28.7 | 28.9 |
| 32.5 | 26.8 | 27.0 | 27.2 | 27.4 | 27.6 | 27.9 | 28.1 | 28.3 | 28.5 | 28.7 | 28.9 | 29.1 | 29.3 |
| 33.0 | 27.2 | 27.4 | 27.6 | 27.8 | 28.0 | 28.2 | 28.4 | 28.6 | 28.8 | 29.0 | 29.2 | 29.4 | 29.7 |
| 33.5 | 27.5 | 27.8 | 28.0 | 28.2 | 28.4 | 28.6 | 28.8 | 29.0 | 29.2 | 29.4 | 29.6 | 29.8 | 30.0 |
| 34.0 | 27.9 | 28.1 | 28.3 | 28.5 | 28.7 | 28.9 | 29.1 | 29.4 | 29.6 | 29.8 | 30.0 | 30.2 | 30.4 |
| 34.5 | 28.2 | 28.5 | 28.7 | 28.9 | 29.1 | 29.3 | 29.5 | 29.7 | 29.9 | 30.1 | 30.4 | 30.6 | 30.8 |
| 35.0 | 28.6 | 28.8 | 29.0 | 29.2 | 29.4 | 29.7 | 29.9 | 30.1 | 30.3 | 30.5 | 30.7 | 31.0 | 31.2 |
| 35.5 | 28.9 | 29.1 | 29.4 | 29.6 | 29.8 | 30.0 | 30.2 | 30.5 | 30.7 | 30.9 | 31.1 | 31.3 | 31.5 |
| 36.0 | 29.3 | 29.5 | 29.7 | 29.9 | 30.2 | 30.4 | 30.6 | 30.8 | 31.0 | 31.3 | 31.5 | 31.7 | 31.9 |
| 36.5 | 29.6 | 29.8 | 30.1 | 30.3 | 30.5 | 30.7 | 31.0 | 31.2 | 31.4 | 31.6 | 31.8 | 32.1 | 32.3 |
| 37.0 | 30.0 | 30.2 | 30.4 | 30.6 | 30.9 | 31.1 | 31.3 | 31.5 | 31.8 | 32.0 | 32.2 | 32.4 | 32.7 |
| 37.5 | 30.3 | 30.5 | 30.8 | 31.0 | 31.2 | 31.4 | 31.7 | 31.9 | 32.1 | 32.4 | 32.6 | 32.8 | 33.0 |
| 38.0 | 30.7 | 30.9 | 31.1 | 31.3 | 31.6 | 31.8 | 32.0 | 32.3 | 32.5 | 32.7 | 33.0 | 33.2 | 33.4 |
| 38.5 | 31.0 | 31.2 | 31.5 | 31.7 | 31.9 | 32.2 | 32.4 | 32.6 | 32.9 | 33.1 | 33.3 | 33.6 | 33.8 |
| 39.0 | 31.3 | 31.6 | 31.8 | 32.0 | 32.3 | 32.5 | 32.7 | 33.0 | 33.2 | 33.5 | 33.7 | 33.9 | 34.2 |
| 39.5 | 31.7 | 31.9 | 32.1 | 32.4 | 32.6 | 32.9 | 33.1 | 33.3 | 33.6 | 33.8 | 34.1 | 34.3 | 34.5 |
| 40.0 | 32.0 | 32.3 | 32.5 | 32.7 | 33.0 | 33.2 | 33.5 | 33.7 | 33.9 | 34.2 | 34.4 | 34.7 | 34.9 |
| 40.5 | 32.4 | 32.6 | 32.8 | 33.1 | 33.3 | 33.6 | 33.8 | 34.0 | 34.3 | 34.5 | 34.8 | 35.0 | 35.3 |
| 41.0 | 32.7 | 32.9 | 33.2 | 33.4 | 33.7 | 33.9 | 34.2 | 34.4 | 34.7 | 34.9 | 35.1 | 35.4 | 35.6 |
| 41.5 | 33.0 | 33.3 | 33.5 | 33.8 | 34.0 | 34.3 | 34.5 | 34.8 | 35.0 | 35.3 | 35.5 | 35.8 | 36.0 |
| 42.0 | 33.4 | 33.6 | 33.9 | 34.1 | 34.4 | 34.6 | 34.9 | 35.1 | 35.4 | 35.6 | 35.9 | 36.1 | 36.4 |
| 42.5 | 33.7 | 34.0 | 34.2 | 34.5 | 34.7 | 35.0 | 35.2 | 35.5 | 35.7 | 36.0 | 36.2 | 36.5 | 36.7 |
| 43.0 | 34.0 | 34.3 | 34.5 | 34.8 | 35.1 | 35.3 | 35.6 | 35.8 | 36.1 | 36.3 | 36.6 | 36.9 | 37.1 |
| 43.5 | 34.4 | 34.6 | 34.9 | 35.1 | 35.4 | 35.7 | 35.9 | 36.2 | 36.4 | 36.7 | 37.0 | 37.2 | 37.5 |
| 44.0 | 34.7 | 35.0 | 35.2 | 35.5 | 35.7 | 36.0 | 36.3 | 36.5 | 36.8 | 37.1 | 37.3 | 37.6 | 37.8 |
| 44.5 | 35.0 | 35.3 | 35.6 | 35.8 | 36.1 | 36.4 | 36.6 | 36.9 | 37.1 | 37.4 | 37.7 | 37.9 | 38.2 |
| 45.0 | 35.4 | 35.6 | 35.9 | 36.2 | 36.4 | 36.7 | 37.0 | 37.2 | 37.5 | 37.8 | 38.0 | 38.3 | 38.6 |
| 45.5 | 35.7 | 36.0 | 36.2 | 36.5 | 36.8 | 37.0 | 37.3 | 37.6 | 37.9 | 38.1 | 38.4 | 38.7 | 38.9 |
| 46.0 | 36.0 | 36.3 | 36.6 | 36.8 | 37.1 | 37.4 | 37.7 | 37.9 | 38.2 | 38.5 | 38.7 | 39.0 | 39.3 |
| 46.5 | 36.4 | 36.6 | 36.9 | 37.2 | 37.5 | 37.7 | 38.0 | 38.3 | 38.6 | 38.8 | 39.1 | 39.4 | 39.7 |
| 47.0 | 36.7 | 37.0 | 37.3 | 37.5 | 37.8 | 38.1 | 38.4 | 38.6 | 38.9 | 39.2 | 39.5 | 39.7 | 40.0 |
| 47.5 | 37.0 | 37.3 | 37.6 | 37.9 | 38.1 | 38.4 | 38.7 | 39.0 | 39.3 | 39.5 | 39.8 | 40.1 | 40.4 |
| 48.0 | 37.4 | 37.6 | 37.9 | 38.2 | 38.5 | 38.8 | 39.0 | 39.3 | 39.6 | 39.9 | 40.2 | 40.5 | 40.7 |
| 48.5 | 37.7 | 38.0 | 38.3 | 38.5 | 38.8 | 39.1 | 39.4 | 39.7 | 40.0 | 40.2 | 40.5 | 40.8 | 41.1 |
| 49.0 | 38.0 | 38.3 | 38.6 | 38.9 | 39.2 | 39.4 | 39.7 | 40.0 | 40.3 | 40.6 | 40.9 | 41.2 | 41.5 |
| 49.5 | 38.4 | 38.6 | 38.9 | 39.2 | 39.5 | 39.8 | 40.1 | 40.4 | 40.7 | 40.9 | 41.2 | 41.5 | 41.8 |
| 50.0 | 38.7 | 39.0 | 39.3 | 39.5 | 39.8 | 40.1 | 40.4 | 40.7 | 41.0 | 41.3 | 41.6 | 41.9 | 42.2 |
| 50.5 | 39.0 | 39.3 | 39.6 | 39.9 | 40.2 | 40.5 | 40.8 | 41.1 | 41.3 | 41.6 | 41.9 | 42.2 | 42.5 |
| 51.0 | 39.3 | 39.6 | 39.9 | 40.2 | 40.5 | 40.8 | 41.1 | 41.4 | 41.7 | 42.0 | 42.3 | 42.6 | 42.9 |
| 51.5 | 39.7 | 40.0 | 40.3 | 40.6 | 40.8 | 41.1 | 41.4 | 41.7 | 42.0 | 42.3 | 42.6 | 42.9 | 43.2 |
| 52.0 | 40.0 | 40.3 | 40.6 | 40.9 | 41.2 | 41.5 | 41.8 | 42.1 | 42.4 | 42.7 | 43.0 | 43.3 | 43.6 |
| 52.5 | 40.3 | 40.6 | 40.9 | 41.2 | 41.5 | 41.8 | 42.1 | 42.4 | 42.7 | 43.0 | 43.3 | 43.6 | 44.0 |
| 53.0 | 40.6 | 40.9 | 41.2 | 41.6 | 41.9 | 42.2 | 42.5 | 42.8 | 43.1 | 43.4 | 43.7 | 44.0 | 44.3 |
| 53.5 | 41.0 | 41.3 | 41.6 | 41.9 | 42.2 | 42.5 | 42.8 | 43.1 | 43.4 | 43.7 | 44.0 | 44.4 | 44.7 |
| 54.0 | 41.3 | 41.6 | 41.9 | 42.2 | 42.5 | 42.8 | 43.1 | 43.5 | 43.8 | 44.1 | 44.4 | 44.7 | 45.0 |
| 54.5 | 41.6 | 41.9 | 42.2 | 42.5 | 42.9 | 43.2 | 43.5 | 43.8 | 44.1 | 44.4 | 44.7 | 45.1 | 45.4 |
| 55.0 | 41.9 | 42.2 | 42.6 | 42.9 | 43.2 | 43.5 | 43.8 | 44.1 | 44.5 | 44.8 | 45.1 | 45.4 | 45.7 |
| 55.5 | 42.3 | 42.6 | 42.9 | 43.2 | 43.5 | 43.8 | 44.2 | 44.5 | 44.8 | 45.1 | 45.4 | 45.8 | 46.1 |
| 56.0 | 42.6 | 42.9 | 43.2 | 43.5 | 43.9 | 44.2 | 44.5 | 44.8 | 45.1 | 45.5 | 45.8 | 46.1 | 46.4 |
| 56.5 | 42.9 | 43.2 | 43.5 | 43.9 | 44.2 | 44.5 | 44.8 | 45.2 | 45.5 | 45.8 | 46.1 | 46.5 | 46.8 |
| 57.0 | 43.2 | 43.5 | 43.9 | 44.2 | 44.5 | 44.8 | 45.2 | 45.5 | 45.8 | 46.1 | 46.5 | 46.8 | 47.1 |
| 57.5 | 43.5 | 43.9 | 44.2 | 44.5 | 44.8 | 45.2 | 45.5 | 45.8 | 46.2 | 46.5 | 46.8 | 47.1 | 47.5 |
| 58.0 | 43.9 | 44.2 | 44.5 | 44.9 | 45.2 | 45.5 | 45.8 | 46.2 | 46.5 | 46.8 | 47.2 | 47.5 | 47.8 |
| 58.5 | 44.2 | 44.5 | 44.8 | 45.2 | 45.5 | 45.8 | 46.2 | 46.5 | 46.8 | 47.2 | 47.5 | 47.8 | 48.2 |
| 59.0 | 44.5 | 44.8 | 45.2 | 45.5 | 45.8 | 46.2 | 46.5 | 46.8 | 47.2 | 47.5 | 47.9 | 48.2 | 48.5 |
| 59.5 | 44.8 | 45.2 | 45.5 | 45.8 | 46.2 | 46.5 | 46.8 | 47.2 | 47.5 | 47.9 | 48.2 | 48.5 | 48.9 |
| 60.0 | 45.1 | 45.5 | 45.8 | 46.2 | 46.5 | 46.8 | 47.2 | 47.5 | 47.9 | 48.2 | 48.5 | 48.9 | 49.2 |
| 60.5 | 45.5 | 45.8 | 46.1 | 46.5 | 46.8 | 47.2 | 47.5 | 47.8 | 48.2 | 48.5 | 48.9 | 49.2 | 49.6 |
| 61.0 | 45.8 | 46.1 | 46.5 | 46.8 | 47.2 | 47.5 | 47.8 | 48.2 | 48.5 | 48.9 | 49.2 | 49.6 | 49.9 |
| 61.5 | 46.1 | 46.4 | 46.8 | 47.1 | 47.5 | 47.8 | 48.2 | 48.5 | 48.9 | 49.2 | 49.6 | 49.9 | 50.3 |
| 62.0 | 46.4 | 46.8 | 47.1 | 47.5 | 47.8 | 48.2 | 48.5 | 48.9 | 49.2 | 49.6 | 49.9 | 50.3 | 50.6 |
| 62.5 | 46.7 | 47.1 | 47.4 | 47.8 | 48.1 | 48.5 | 48.8 | 49.2 | 49.5 | 49.9 | 50.2 | 50.6 | 51.0 |
| 63.0 | 47.1 | 47.4 | 47.8 | 48.1 | 48.5 | 48.8 | 49.2 | 49.5 | 49.9 | 50.2 | 50.6 | 50.9 | 51.3 |
| 63.5 | 47.4 | 47.7 | 48.1 | 48.4 | 48.8 | 49.1 | 49.5 | 49.9 | 50.2 | 50.6 | 50.9 | 51.3 | 51.6 |
| 64.0 | 47.7 | 48.0 | 48.4 | 48.8 | 49.1 | 49.5 | 49.8 | 50.2 | 50.5 | 50.9 | 51.3 | 51.6 | 52.0 |
| 64.5 | 48.0 | 48.4 | 48.7 | 49.1 | 49.4 | 49.8 | 50.2 | 50.5 | 50.9 | 51.2 | 51.6 | 52.0 | 52.3 |
| 65.0 | 48.3 | 48.7 | 49.0 | 49.4 | 49.8 | 50.1 | 50.5 | 50.9 | 51.2 | 51.6 | 51.9 | 52.3 | 52.7 |
| 65.5 | 48.6 | 49.0 | 49.4 | 49.7 | 50.1 | 50.4 | 50.8 | 51.2 | 51.5 | 51.9 | 52.3 | 52.7 | 53.0 |
| 66.0 | 48.9 | 49.3 | 49.7 | 50.0 | 50.4 | 50.8 | 51.1 | 51.5 | 51.9 | 52.3 | 52.6 | 53.0 | 53.4 |
| 66.5 | 49.3 | 49.6 | 50.0 | 50.4 | 50.7 | 51.1 | 51.5 | 51.8 | 52.2 | 52.6 | 53.0 | 53.3 | 53.7 |
| 67.0 | 49.6 | 49.9 | 50.3 | 50.7 | 51.1 | 51.4 | 51.8 | 52.2 | 52.5 | 52.9 | 53.3 | 53.7 | 54.1 |
| 67.5 | 49.9 | 50.3 | 50.6 | 51.0 | 51.4 | 51.8 | 52.1 | 52.5 | 52.9 | 53.3 | 53.6 | 54.0 | 54.4 |
| 68.0 | 50.2 | 50.6 | 51.0 | 51.3 | 51.7 | 52.1 | 52.5 | 52.8 | 53.2 | 53.6 | 54.0 | 54.4 | 54.7 |
| 68.5 | 50.5 | 50.9 | 51.3 | 51.6 | 52.0 | 52.4 | 52.8 | 53.2 | 53.5 | 53.9 | 54.3 | 54.7 | 55.1 |
| 69.0 | 50.8 | 51.2 | 51.6 | 52.0 | 52.3 | 52.7 | 53.1 | 53.5 | 53.9 | 54.3 | 54.6 | 55.0 | 55.4 |
| 69.5 | 51.1 | 51.5 | 51.9 | 52.3 | 52.7 | 53.1 | 53.4 | 53.8 | 54.2 | 54.6 | 55.0 | 55.4 | 55.8 |
| 70.0 | 51.5 | 51.8 | 52.2 | 52.6 | 53.0 | 53.4 | 53.8 | 54.1 | 54.5 | 54.9 | 55.3 | 55.7 | 56.1 |
| 70.5 | 51.8 | 52.1 | 52.5 | 52.9 | 53.3 | 53.7 | 54.1 | 54.5 | 54.9 | 55.3 | 55.6 | 56.0 | 56.4 |
| 71.0 | 52.1 | 52.5 | 52.8 | 53.2 | 53.6 | 54.0 | 54.4 | 54.8 | 55.2 | 55.6 | 56.0 | 56.4 | 56.8 |
| 71.5 | 52.4 | 52.8 | 53.2 | 53.6 | 53.9 | 54.3 | 54.7 | 55.1 | 55.5 | 55.9 | 56.3 | 56.7 | 57.1 |
| 72.0 | 52.7 | 53.1 | 53.5 | 53.9 | 54.3 | 54.7 | 55.1 | 55.5 | 55.9 | 56.3 | 56.7 | 57.1 | 57.5 |
| 72.5 | 53.0 | 53.4 | 53.8 | 54.2 | 54.6 | 55.0 | 55.4 | 55.8 | 56.2 | 56.6 | 57.0 | 57.4 | 57.8 |
| 73.0 | 53.3 | 53.7 | 54.1 | 54.5 | 54.9 | 55.3 | 55.7 | 56.1 | 56.5 | 56.9 | 57.3 | 57.7 | 58.1 |
| 73.5 | 53.6 | 54.0 | 54.4 | 54.8 | 55.2 | 55.6 | 56.0 | 56.4 | 56.8 | 57.2 | 57.7 | 58.1 | 58.5 |
| 74.0 | 53.9 | 54.3 | 54.7 | 55.1 | 55.5 | 55.9 | 56.4 | 56.8 | 57.2 | 57.6 | 58.0 | 58.4 | 58.8 |
| 74.5 | 54.2 | 54.6 | 55.1 | 55.5 | 55.9 | 56.3 | 56.7 | 57.1 | 57.5 | 57.9 | 58.3 | 58.7 | 59.1 |
| 75.0 | 54.6 | 55.0 | 55.4 | 55.8 | 56.2 | 56.6 | 57.0 | 57.4 | 57.8 | 58.2 | 58.6 | 59.1 | 59.5 |
| 75.5 | 54.9 | 55.3 | 55.7 | 56.1 | 56.5 | 56.9 | 57.3 | 57.7 | 58.1 | 58.6 | 59.0 | 59.4 | 59.8 |
| 76.0 | 55.2 | 55.6 | 56.0 | 56.4 | 56.8 | 57.2 | 57.6 | 58.1 | 58.5 | 58.9 | 59.3 | 59.7 | 60.1 |
| 76.5 | 55.5 | 55.9 | 56.3 | 56.7 | 57.1 | 57.5 | 58.0 | 58.4 | 58.8 | 59.2 | 59.6 | 60.1 | 60.5 |
| 77.0 | 55.8 | 56.2 | 56.6 | 57.0 | 57.4 | 57.9 | 58.3 | 58.7 | 59.1 | 59.5 | 60.0 | 60.4 | 60.8 |
| 77.5 | 56.1 | 56.5 | 56.9 | 57.3 | 57.8 | 58.2 | 58.6 | 59.0 | 59.5 | 59.9 | 60.3 | 60.7 | 61.2 |
| 78.0 | 56.4 | 56.8 | 57.2 | 57.7 | 58.1 | 58.5 | 58.9 | 59.4 | 59.8 | 60.2 | 60.6 | 61.1 | 61.5 |
| 78.5 | 56.7 | 57.1 | 57.5 | 58.0 | 58.4 | 58.8 | 59.2 | 59.7 | 60.1 | 60.5 | 61.0 | 61.4 | 61.8 |
| 79.0 | 57.0 | 57.4 | 57.9 | 58.3 | 58.7 | 59.1 | 59.6 | 60.0 | 60.4 | 60.9 | 61.3 | 61.7 | 62.2 |
| 79.5 | 57.3 | 57.7 | 58.2 | 58.6 | 59.0 | 59.5 | 59.9 | 60.3 | 60.7 | 61.2 | 61.6 | 62.1 | 62.5 |
| 80.0 | 57.6 | 58.0 | 58.5 | 58.9 | 59.3 | 59.8 | 60.2 | 60.6 | 61.1 | 61.5 | 61.9 | 62.4 | 62.8 |
| 80.5 | 57.9 | 58.4 | 58.8 | 59.2 | 59.7 | 60.1 | 60.5 | 61.0 | 61.4 | 61.8 | 62.3 | 62.7 | 63.2 |
| 81.0 | 58.2 | 58.7 | 59.1 | 59.5 | 60.0 | 60.4 | 60.8 | 61.3 | 61.7 | 62.2 | 62.6 | 63.0 | 63.5 |
| 81.5 | 58.5 | 59.0 | 59.4 | 59.8 | 60.3 | 60.7 | 61.2 | 61.6 | 62.0 | 62.5 | 62.9 | 63.4 | 63.8 |
| 82.0 | 58.8 | 59.3 | 59.7 | 60.2 | 60.6 | 61.0 | 61.5 | 61.9 | 62.4 | 62.8 | 63.3 | 63.7 | 64.1 |
| 82.5 | 59.1 | 59.6 | 60.0 | 60.5 | 60.9 | 61.4 | 61.8 | 62.2 | 62.7 | 63.1 | 63.6 | 64.0 | 64.5 |
| 83.0 | 59.4 | 59.9 | 60.3 | 60.8 | 61.2 | 61.7 | 62.1 | 62.6 | 63.0 | 63.5 | 63.9 | 64.4 | 64.8 |
| 83.5 | 59.7 | 60.2 | 60.6 | 61.1 | 61.5 | 62.0 | 62.4 | 62.9 | 63.3 | 63.8 | 64.2 | 64.7 | 65.1 |
| 84.0 | 60.1 | 60.5 | 60.9 | 61.4 | 61.8 | 62.3 | 62.7 | 63.2 | 63.7 | 64.1 | 64.6 | 65.0 | 65.5 |
| 84.5 | 60.4 | 60.8 | 61.3 | 61.7 | 62.2 | 62.6 | 63.1 | 63.5 | 64.0 | 64.4 | 64.9 | 65.3 | 65.8 |
| 85.0 | 60.7 | 61.1 | 61.6 | 62.0 | 62.5 | 62.9 | 63.4 | 63.8 | 64.3 | 64.8 | 65.2 | 65.7 | 66.1 |
| 85.5 | 61.0 | 61.4 | 61.9 | 62.3 | 62.8 | 63.2 | 63.7 | 64.2 | 64.6 | 65.1 | 65.5 | 66.0 | 66.5 |
| 86.0 | 61.3 | 61.7 | 62.2 | 62.6 | 63.1 | 63.6 | 64.0 | 64.5 | 64.9 | 65.4 | 65.9 | 66.3 | 66.8 |
| 86.5 | 61.6 | 62.0 | 62.5 | 62.9 | 63.4 | 63.9 | 64.3 | 64.8 | 65.3 | 65.7 | 66.2 | 66.7 | 67.1 |
| 87.0 | 61.9 | 62.3 | 62.8 | 63.2 | 63.7 | 64.2 | 64.6 | 65.1 | 65.6 | 66.0 | 66.5 | 67.0 | 67.5 |
| 87.5 | 62.2 | 62.6 | 63.1 | 63.6 | 64.0 | 64.5 | 65.0 | 65.4 | 65.9 | 66.4 | 66.8 | 67.3 | 67.8 |
| 88.0 | 62.5 | 62.9 | 63.4 | 63.9 | 64.3 | 64.8 | 65.3 | 65.7 | 66.2 | 66.7 | 67.2 | 67.6 | 68.1 |
| 88.5 | 62.8 | 63.2 | 63.7 | 64.2 | 64.6 | 65.1 | 65.6 | 66.1 | 66.5 | 67.0 | 67.5 | 68.0 | 68.4 |
| 89.0 | 63.1 | 63.5 | 64.0 | 64.5 | 65.0 | 65.4 | 65.9 | 66.4 | 66.9 | 67.3 | 67.8 | 68.3 | 68.8 |
| 89.5 | 63.4 | 63.8 | 64.3 | 64.8 | 65.3 | 65.7 | 66.2 | 66.7 | 67.2 | 67.6 | 68.1 | 68.6 | 69.1 |
| 90.0 | 63.7 | 64.1 | 64.6 | 65.1 | 65.6 | 66.0 | 66.5 | 67.0 | 67.5 | 68.0 | 68.4 | 68.9 | 69.4 |

| 续表B | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值*f c cu* (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值*v*（km/s） | | | | | | | | | | | | |
| 3.96 | 3.98 | 4.00 | 4.02 | 4.04 | 4.06 | 4.08 | 4.10 | 4.12 | 4.14 | 4.16 | 4.18 | 4.20 |
| 28.0 | 26.0 | 26.2 | 26.3 | 26.5 | 26.7 | 26.9 | 27.1 | 27.2 | 27.4 | 27.6 | 27.8 | 28.0 | 28.2 |
| 28.5 | 26.4 | 26.6 | 26.7 | 26.9 | 27.1 | 27.3 | 27.5 | 27.7 | 27.8 | 28.0 | 28.2 | 28.4 | 28.6 |
| 29.0 | 26.8 | 26.9 | 27.1 | 27.3 | 27.5 | 27.7 | 27.9 | 28.1 | 28.3 | 28.4 | 28.6 | 28.8 | 29.0 |
| 29.5 | 27.2 | 27.3 | 27.5 | 27.7 | 27.9 | 28.1 | 28.3 | 28.5 | 28.7 | 28.9 | 29.1 | 29.2 | 29.4 |
| 30.0 | 27.5 | 27.7 | 27.9 | 28.1 | 28.3 | 28.5 | 28.7 | 28.9 | 29.1 | 29.3 | 29.5 | 29.7 | 29.9 |
| 30.5 | 27.9 | 28.1 | 28.3 | 28.5 | 28.7 | 28.9 | 29.1 | 29.3 | 29.5 | 29.7 | 29.9 | 30.1 | 30.3 |
| 31.0 | 28.3 | 28.5 | 28.7 | 28.9 | 29.1 | 29.3 | 29.5 | 29.7 | 29.9 | 30.1 | 30.3 | 30.5 | 30.7 |
| 31.5 | 28.7 | 28.9 | 29.1 | 29.3 | 29.5 | 29.7 | 29.9 | 30.1 | 30.3 | 30.5 | 30.7 | 30.9 | 31.1 |
| 32.0 | 29.1 | 29.3 | 29.5 | 29.7 | 29.9 | 30.1 | 30.3 | 30.5 | 30.7 | 30.9 | 31.1 | 31.3 | 31.5 |
| 32.5 | 29.5 | 29.7 | 29.9 | 30.1 | 30.3 | 30.5 | 30.7 | 30.9 | 31.1 | 31.3 | 31.5 | 31.8 | 32.0 |
| 33.0 | 29.9 | 30.1 | 30.3 | 30.5 | 30.7 | 30.9 | 31.1 | 31.3 | 31.5 | 31.7 | 32.0 | 32.2 | 32.4 |
| 33.5 | 30.2 | 30.5 | 30.7 | 30.9 | 31.1 | 31.3 | 31.5 | 31.7 | 31.9 | 32.1 | 32.4 | 32.6 | 32.8 |
| 34.0 | 30.6 | 30.8 | 31.1 | 31.3 | 31.5 | 31.7 | 31.9 | 32.1 | 32.3 | 32.6 | 32.8 | 33.0 | 33.2 |
| 34.5 | 31.0 | 31.2 | 31.4 | 31.7 | 31.9 | 32.1 | 32.3 | 32.5 | 32.7 | 33.0 | 33.2 | 33.4 | 33.6 |
| 35.0 | 31.4 | 31.6 | 31.8 | 32.0 | 32.3 | 32.5 | 32.7 | 32.9 | 33.1 | 33.4 | 33.6 | 33.8 | 34.0 |
| 35.5 | 31.8 | 32.0 | 32.2 | 32.4 | 32.7 | 32.9 | 33.1 | 33.3 | 33.5 | 33.8 | 34.0 | 34.2 | 34.4 |
| 36.0 | 32.1 | 32.4 | 32.6 | 32.8 | 33.0 | 33.3 | 33.5 | 33.7 | 33.9 | 34.2 | 34.4 | 34.6 | 34.9 |
| 36.5 | 32.5 | 32.7 | 33.0 | 33.2 | 33.4 | 33.7 | 33.9 | 34.1 | 34.3 | 34.6 | 34.8 | 35.0 | 35.3 |
| 37.0 | 32.9 | 33.1 | 33.4 | 33.6 | 33.8 | 34.0 | 34.3 | 34.5 | 34.7 | 35.0 | 35.2 | 35.4 | 35.7 |
| 37.5 | 33.3 | 33.5 | 33.7 | 34.0 | 34.2 | 34.4 | 34.7 | 34.9 | 35.1 | 35.4 | 35.6 | 35.8 | 36.1 |
| 38.0 | 33.7 | 33.9 | 34.1 | 34.4 | 34.6 | 34.8 | 35.1 | 35.3 | 35.5 | 35.8 | 36.0 | 36.3 | 36.5 |
| 38.5 | 34.0 | 34.3 | 34.5 | 34.7 | 35.0 | 35.2 | 35.5 | 35.7 | 35.9 | 36.2 | 36.4 | 36.7 | 36.9 |
| 39.0 | 34.4 | 34.6 | 34.9 | 35.1 | 35.4 | 35.6 | 35.8 | 36.1 | 36.3 | 36.6 | 36.8 | 37.1 | 37.3 |
| 39.5 | 34.8 | 35.0 | 35.3 | 35.5 | 35.7 | 36.0 | 36.2 | 36.5 | 36.7 | 37.0 | 37.2 | 37.5 | 37.7 |
| 40.0 | 35.1 | 35.4 | 35.6 | 35.9 | 36.1 | 36.4 | 36.6 | 36.9 | 37.1 | 37.4 | 37.6 | 37.9 | 38.1 |
| 40.5 | 35.5 | 35.8 | 36.0 | 36.3 | 36.5 | 36.8 | 37.0 | 37.3 | 37.5 | 37.8 | 38.0 | 38.3 | 38.5 |
| 41.0 | 35.9 | 36.1 | 36.4 | 36.6 | 36.9 | 37.1 | 37.4 | 37.6 | 37.9 | 38.2 | 38.4 | 38.7 | 38.9 |
| 41.5 | 36.3 | 36.5 | 36.8 | 37.0 | 37.3 | 37.5 | 37.8 | 38.0 | 38.3 | 38.5 | 38.8 | 39.1 | 39.3 |
| 42.0 | 36.6 | 36.9 | 37.1 | 37.4 | 37.7 | 37.9 | 38.2 | 38.4 | 38.7 | 38.9 | 39.2 | 39.5 | 39.7 |
| 42.5 | 37.0 | 37.3 | 37.5 | 37.8 | 38.0 | 38.3 | 38.6 | 38.8 | 39.1 | 39.3 | 39.6 | 39.9 | 40.1 |
| 43.0 | 37.4 | 37.6 | 37.9 | 38.2 | 38.4 | 38.7 | 38.9 | 39.2 | 39.5 | 39.7 | 40.0 | 40.3 | 40.5 |
| 43.5 | 37.7 | 38.0 | 38.3 | 38.5 | 38.8 | 39.1 | 39.3 | 39.6 | 39.9 | 40.1 | 40.4 | 40.7 | 40.9 |
| 44.0 | 38.1 | 38.4 | 38.6 | 38.9 | 39.2 | 39.4 | 39.7 | 40.0 | 40.2 | 40.5 | 40.8 | 41.0 | 41.3 |
| 44.5 | 38.5 | 38.7 | 39.0 | 39.3 | 39.5 | 39.8 | 40.1 | 40.4 | 40.6 | 40.9 | 41.2 | 41.4 | 41.7 |
| 45.0 | 38.8 | 39.1 | 39.4 | 39.7 | 39.9 | 40.2 | 40.5 | 40.7 | 41.0 | 41.3 | 41.6 | 41.8 | 42.1 |
| 45.5 | 39.2 | 39.5 | 39.8 | 40.0 | 40.3 | 40.6 | 40.8 | 41.1 | 41.4 | 41.7 | 42.0 | 42.2 | 42.5 |
| 46.0 | 39.6 | 39.8 | 40.1 | 40.4 | 40.7 | 41.0 | 41.2 | 41.5 | 41.8 | 42.1 | 42.3 | 42.6 | 42.9 |
| 46.5 | 39.9 | 40.2 | 40.5 | 40.8 | 41.0 | 41.3 | 41.6 | 41.9 | 42.2 | 42.5 | 42.7 | 43.0 | 43.3 |
| 47.0 | 40.3 | 40.6 | 40.9 | 41.1 | 41.4 | 41.7 | 42.0 | 42.3 | 42.6 | 42.8 | 43.1 | 43.4 | 43.7 |
| 47.5 | 40.7 | 40.9 | 41.2 | 41.5 | 41.8 | 42.1 | 42.4 | 42.7 | 42.9 | 43.2 | 43.5 | 43.8 | 44.1 |
| 48.0 | 41.0 | 41.3 | 41.6 | 41.9 | 42.2 | 42.5 | 42.7 | 43.0 | 43.3 | 43.6 | 43.9 | 44.2 | 44.5 |
| 48.5 | 41.4 | 41.7 | 42.0 | 42.3 | 42.5 | 42.8 | 43.1 | 43.4 | 43.7 | 44.0 | 44.3 | 44.6 | 44.9 |
| 49.0 | 41.7 | 42.0 | 42.3 | 42.6 | 42.9 | 43.2 | 43.5 | 43.8 | 44.1 | 44.4 | 44.7 | 45.0 | 45.3 |
| 49.5 | 42.1 | 42.4 | 42.7 | 43.0 | 43.3 | 43.6 | 43.9 | 44.2 | 44.5 | 44.8 | 45.1 | 45.4 | 45.7 |
| 50.0 | 42.5 | 42.8 | 43.1 | 43.4 | 43.7 | 44.0 | 44.2 | 44.5 | 44.8 | 45.1 | 45.4 | 45.7 | 46.0 |
| 50.5 | 42.8 | 43.1 | 43.4 | 43.7 | 44.0 | 44.3 | 44.6 | 44.9 | 45.2 | 45.5 | 45.8 | 46.1 | 46.4 |
| 51.0 | 43.2 | 43.5 | 43.8 | 44.1 | 44.4 | 44.7 | 45.0 | 45.3 | 45.6 | 45.9 | 46.2 | 46.5 | 46.8 |
| 51.5 | 43.5 | 43.8 | 44.2 | 44.5 | 44.8 | 45.1 | 45.4 | 45.7 | 46.0 | 46.3 | 46.6 | 46.9 | 47.2 |
| 52.0 | 43.9 | 44.2 | 44.5 | 44.8 | 45.1 | 45.4 | 45.7 | 46.1 | 46.4 | 46.7 | 47.0 | 47.3 | 47.6 |
| 52.5 | 44.3 | 44.6 | 44.9 | 45.2 | 45.5 | 45.8 | 46.1 | 46.4 | 46.7 | 47.1 | 47.4 | 47.7 | 48.0 |
| 53.0 | 44.6 | 44.9 | 45.2 | 45.6 | 45.9 | 46.2 | 46.5 | 46.8 | 47.1 | 47.4 | 47.7 | 48.1 | 48.4 |
| 53.5 | 45.0 | 45.3 | 45.6 | 45.9 | 46.2 | 46.5 | 46.9 | 47.2 | 47.5 | 47.8 | 48.1 | 48.4 | 48.8 |
| 54.0 | 45.3 | 45.6 | 46.0 | 46.3 | 46.6 | 46.9 | 47.2 | 47.6 | 47.9 | 48.2 | 48.5 | 48.8 | 49.2 |
| 54.5 | 45.7 | 46.0 | 46.3 | 46.6 | 47.0 | 47.3 | 47.6 | 47.9 | 48.2 | 48.6 | 48.9 | 49.2 | 49.5 |
| 55.0 | 46.0 | 46.4 | 46.7 | 47.0 | 47.3 | 47.6 | 48.0 | 48.3 | 48.6 | 48.9 | 49.3 | 49.6 | 49.9 |
| 55.5 | 46.4 | 46.7 | 47.0 | 47.4 | 47.7 | 48.0 | 48.3 | 48.7 | 49.0 | 49.3 | 49.7 | 50.0 | 50.3 |
| 56.0 | 46.8 | 47.1 | 47.4 | 47.7 | 48.1 | 48.4 | 48.7 | 49.0 | 49.4 | 49.7 | 50.0 | 50.4 | 50.7 |
| 56.5 | 47.1 | 47.4 | 47.8 | 48.1 | 48.4 | 48.7 | 49.1 | 49.4 | 49.7 | 50.1 | 50.4 | 50.7 | 51.1 |
| 57.0 | 47.5 | 47.8 | 48.1 | 48.5 | 48.8 | 49.1 | 49.4 | 49.8 | 50.1 | 50.5 | 50.8 | 51.1 | 51.5 |
| 57.5 | 47.8 | 48.1 | 48.5 | 48.8 | 49.1 | 49.5 | 49.8 | 50.2 | 50.5 | 50.8 | 51.2 | 51.5 | 51.8 |
| 58.0 | 48.2 | 48.5 | 48.8 | 49.2 | 49.5 | 49.8 | 50.2 | 50.5 | 50.9 | 51.2 | 51.5 | 51.9 | 52.2 |
| 58.5 | 48.5 | 48.9 | 49.2 | 49.5 | 49.9 | 50.2 | 50.5 | 50.9 | 51.2 | 51.6 | 51.9 | 52.3 | 52.6 |
| 59.0 | 48.9 | 49.2 | 49.5 | 49.9 | 50.2 | 50.6 | 50.9 | 51.3 | 51.6 | 51.9 | 52.3 | 52.6 | 53.0 |
| 59.5 | 49.2 | 49.6 | 49.9 | 50.2 | 50.6 | 50.9 | 51.3 | 51.6 | 52.0 | 52.3 | 52.7 | 53.0 | 53.4 |
| 60.0 | 49.6 | 49.9 | 50.3 | 50.6 | 51.0 | 51.3 | 51.6 | 52.0 | 52.3 | 52.7 | 53.0 | 53.4 | 53.7 |
| 60.5 | 49.9 | 50.3 | 50.6 | 51.0 | 51.3 | 51.7 | 52.0 | 52.4 | 52.7 | 53.1 | 53.4 | 53.8 | 54.1 |
| 61.0 | 50.3 | 50.6 | 51.0 | 51.3 | 51.7 | 52.0 | 52.4 | 52.7 | 53.1 | 53.4 | 53.8 | 54.1 | 54.5 |
| 61.5 | 50.6 | 51.0 | 51.3 | 51.7 | 52.0 | 52.4 | 52.7 | 53.1 | 53.5 | 53.8 | 54.2 | 54.5 | 54.9 |
| 62.0 | 51.0 | 51.3 | 51.7 | 52.0 | 52.4 | 52.7 | 53.1 | 53.5 | 53.8 | 54.2 | 54.5 | 54.9 | 55.3 |
| 62.5 | 51.3 | 51.7 | 52.0 | 52.4 | 52.7 | 53.1 | 53.5 | 53.8 | 54.2 | 54.5 | 54.9 | 55.3 | 55.6 |
| 63.0 | 51.7 | 52.0 | 52.4 | 52.7 | 53.1 | 53.5 | 53.8 | 54.2 | 54.6 | 54.9 | 55.3 | 55.6 | 56.0 |
| 63.5 | 52.0 | 52.4 | 52.7 | 53.1 | 53.5 | 53.8 | 54.2 | 54.6 | 54.9 | 55.3 | 55.7 | 56.0 | 56.4 |
| 64.0 | 52.4 | 52.7 | 53.1 | 53.4 | 53.8 | 54.2 | 54.6 | 54.9 | 55.3 | 55.7 | 56.0 | 56.4 | 56.8 |
| 64.5 | 52.7 | 53.1 | 53.4 | 53.8 | 54.2 | 54.5 | 54.9 | 55.3 | 55.7 | 56.0 | 56.4 | 56.8 | 57.1 |
| 65.0 | 53.0 | 53.4 | 53.8 | 54.2 | 54.5 | 54.9 | 55.3 | 55.6 | 56.0 | 56.4 | 56.8 | 57.1 | 57.5 |
| 65.5 | 53.4 | 53.8 | 54.1 | 54.5 | 54.9 | 55.3 | 55.6 | 56.0 | 56.4 | 56.8 | 57.1 | 57.5 | 57.9 |
| 66.0 | 53.7 | 54.1 | 54.5 | 54.9 | 55.2 | 55.6 | 56.0 | 56.4 | 56.7 | 57.1 | 57.5 | 57.9 | 58.3 |
| 66.5 | 54.1 | 54.5 | 54.8 | 55.2 | 55.6 | 56.0 | 56.4 | 56.7 | 57.1 | 57.5 | 57.9 | 58.3 | 58.6 |
| 67.0 | 54.4 | 54.8 | 55.2 | 55.6 | 55.9 | 56.3 | 56.7 | 57.1 | 57.5 | 57.9 | 58.2 | 58.6 | 59.0 |
| 67.5 | 54.8 | 55.2 | 55.5 | 55.9 | 56.3 | 56.7 | 57.1 | 57.5 | 57.8 | 58.2 | 58.6 | 59.0 | 59.4 |
| 68.0 | 55.1 | 55.5 | 55.9 | 56.3 | 56.7 | 57.0 | 57.4 | 57.8 | 58.2 | 58.6 | 59.0 | 59.4 | 59.8 |
| 68.5 | 55.5 | 55.8 | 56.2 | 56.6 | 57.0 | 57.4 | 57.8 | 58.2 | 58.6 | 59.0 | 59.3 | 59.7 | 60.1 |
| 69.0 | 55.8 | 56.2 | 56.6 | 57.0 | 57.4 | 57.8 | 58.1 | 58.5 | 58.9 | 59.3 | 59.7 | 60.1 | 60.5 |
| 69.5 | 56.1 | 56.5 | 56.9 | 57.3 | 57.7 | 58.1 | 58.5 | 58.9 | 59.3 | 59.7 | 60.1 | 60.5 | 60.9 |
| 70.0 | 56.5 | 56.9 | 57.3 | 57.7 | 58.1 | 58.5 | 58.9 | 59.3 | 59.7 | 60.0 | 60.4 | 60.8 | 61.2 |
| 70.5 | 56.8 | 57.2 | 57.6 | 58.0 | 58.4 | 58.8 | 59.2 | 59.6 | 60.0 | 60.4 | 60.8 | 61.2 | 61.6 |
| 71.0 | 57.2 | 57.6 | 58.0 | 58.4 | 58.8 | 59.2 | 59.6 | 60.0 | 60.4 | 60.8 | 61.2 | 61.6 | 62.0 |
| 71.5 | 57.5 | 57.9 | 58.3 | 58.7 | 59.1 | 59.5 | 59.9 | 60.3 | 60.7 | 61.1 | 61.5 | 62.0 | 62.4 |
| 72.0 | 57.9 | 58.3 | 58.7 | 59.1 | 59.5 | 59.9 | 60.3 | 60.7 | 61.1 | 61.5 | 61.9 | 62.3 | 62.7 |
| 72.5 | 58.2 | 58.6 | 59.0 | 59.4 | 59.8 | 60.2 | 60.6 | 61.0 | 61.5 | 61.9 | 62.3 | 62.7 | 63.1 |
| 73.0 | 58.5 | 58.9 | 59.3 | 59.8 | 60.2 | 60.6 | 61.0 | 61.4 | 61.8 | 62.2 | 62.6 | 63.1 | 63.5 |
| 73.5 | 58.9 | 59.3 | 59.7 | 60.1 | 60.5 | 60.9 | 61.3 | 61.8 | 62.2 | 62.6 | 63.0 | 63.4 | 63.8 |
| 74.0 | 59.2 | 59.6 | 60.0 | 60.5 | 60.9 | 61.3 | 61.7 | 62.1 | 62.5 | 62.9 | 63.4 | 63.8 | 64.2 |
| 74.5 | 59.6 | 60.0 | 60.4 | 60.8 | 61.2 | 61.6 | 62.0 | 62.5 | 62.9 | 63.3 | 63.7 | 64.1 | 64.6 |
| 75.0 | 59.9 | 60.3 | 60.7 | 61.1 | 61.6 | 62.0 | 62.4 | 62.8 | 63.2 | 63.7 | 64.1 | 64.5 | 64.9 |
| 75.5 | 60.2 | 60.6 | 61.1 | 61.5 | 61.9 | 62.3 | 62.8 | 63.2 | 63.6 | 64.0 | 64.5 | 64.9 | 65.3 |
| 76.0 | 60.6 | 61.0 | 61.4 | 61.8 | 62.3 | 62.7 | 63.1 | 63.5 | 64.0 | 64.4 | 64.8 | 65.2 | 65.7 |
| 76.5 | 60.9 | 61.3 | 61.8 | 62.2 | 62.6 | 63.0 | 63.5 | 63.9 | 64.3 | 64.7 | 65.2 | 65.6 | 66.0 |
| 77.0 | 61.2 | 61.7 | 62.1 | 62.5 | 63.0 | 63.4 | 63.8 | 64.2 | 64.7 | 65.1 | 65.5 | 66.0 | 66.4 |
| 77.5 | 61.6 | 62.0 | 62.4 | 62.9 | 63.3 | 63.7 | 64.2 | 64.6 | 65.0 | 65.5 | 65.9 | 66.3 | 66.8 |
| 78.0 | 61.9 | 62.3 | 62.8 | 63.2 | 63.6 | 64.1 | 64.5 | 64.9 | 65.4 | 65.8 | 66.3 | 66.7 | 67.1 |
| 78.5 | 62.3 | 62.7 | 63.1 | 63.6 | 64.0 | 64.4 | 64.9 | 65.3 | 65.7 | 66.2 | 66.6 | 67.1 | 67.5 |
| 79.0 | 62.6 | 63.0 | 63.5 | 63.9 | 64.3 | 64.8 | 65.2 | 65.7 | 66.1 | 66.5 | 67.0 | 67.4 | 67.9 |
| 79.5 | 62.9 | 63.4 | 63.8 | 64.2 | 64.7 | 65.1 | 65.6 | 66.0 | 66.4 | 66.9 | 67.3 | 67.8 | 68.2 |
| 80.0 | 63.3 | 63.7 | 64.1 | 64.6 | 65.0 | 65.5 | 65.9 | 66.4 | 66.8 | 67.2 | 67.7 | 68.1 | 68.6 |
| 80.5 | 63.6 | 64.0 | 64.5 | 64.9 | 65.4 | 65.8 | 66.3 | 66.7 | 67.2 | 67.6 | 68.1 | 68.5 | 69.0 |
| 81.0 | 63.9 | 64.4 | 64.8 | 65.3 | 65.7 | 66.2 | 66.6 | 67.1 | 67.5 | 68.0 | 68.4 | 68.9 | 69.3 |
| 81.5 | 64.3 | 64.7 | 65.2 | 65.6 | 66.1 | 66.5 | 67.0 | 67.4 | 67.9 | 68.3 | 68.8 | 69.2 | 69.7 |
| 82.0 | 64.6 | 65.0 | 65.5 | 65.9 | 66.4 | 66.9 | 67.3 | 67.8 | 68.2 | 68.7 | 69.1 | 69.6 | / |
| 82.5 | 64.9 | 65.4 | 65.8 | 66.3 | 66.7 | 67.2 | 67.7 | 68.1 | 68.6 | 69.0 | 69.5 | 69.9 | / |
| 83.0 | 65.3 | 65.7 | 66.2 | 66.6 | 67.1 | 67.5 | 68.0 | 68.5 | 68.9 | 69.4 | 69.8 | / | / |
| 83.5 | 65.6 | 66.1 | 66.5 | 67.0 | 67.4 | 67.9 | 68.3 | 68.8 | 69.3 | 69.7 | / | / | / |
| 84.0 | 65.9 | 66.4 | 66.8 | 67.3 | 67.8 | 68.2 | 68.7 | 69.2 | 69.6 | / | / | / | / |
| 84.5 | 66.3 | 66.7 | 67.2 | 67.6 | 68.1 | 68.6 | 69.0 | 69.5 | 70.0 | / | / | / | / |
| 85.0 | 66.6 | 67.1 | 67.5 | 68.0 | 68.5 | 68.9 | 69.4 | 69.9 | / | / | / | / | / |
| 85.5 | 66.9 | 67.4 | 67.9 | 68.3 | 68.8 | 69.3 | 69.7 | / | / | / | / | / | / |
| 86.0 | 67.3 | 67.7 | 68.2 | 68.7 | 69.1 | 69.6 | / | / | / | / | / | / | / |
| 86.5 | 67.6 | 68.1 | 68.5 | 69.0 | 69.5 | 69.9 | / | / | / | / | / | / | / |
| 87.0 | 67.9 | 68.4 | 68.9 | 69.3 | 69.8 | / | / | / | / | / | / | / | / |
| 87.5 | 68.3 | 68.7 | 69.2 | 69.7 | / | / | / | / | / | / | / | / | / |
| 88.0 | 68.6 | 69.1 | 69.5 | / | / | / | / | / | / | / | / | / | / |
| 88.5 | 68.9 | 69.4 | 69.9 | / | / | / | / | / | / | / | / | / | / |
| 89.0 | 69.2 | 69.7 | / | / | / | / | / | / | / | / | / | / | / |
| 89.5 | 69.6 | / | / | / | / | / | / | / | / | / | / | / | / |
| 90.0 | 69.9 | / | / | / | / | / | / | / | / | / | / | / | / |

| 续表B | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值*f c cu* (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值*v*（km/s） | | | | | | | | | | | | |
| 4.22 | 4.24 | 4.26 | 4.28 | 4.30 | 4.32 | 4.34 | 4.36 | 4.38 | 4.40 | 4.42 | 4.44 | 4.46 |
| 28.0 | 28.4 | 28.5 | 28.7 | 28.9 | 29.1 | 29.3 | 29.5 | 29.7 | 29.8 | 30.0 | 30.2 | 30.4 | 30.6 |
| 28.5 | 28.8 | 29.0 | 29.2 | 29.3 | 29.5 | 29.7 | 29.9 | 30.1 | 30.3 | 30.5 | 30.7 | 30.9 | 31.1 |
| 29.0 | 29.2 | 29.4 | 29.6 | 29.8 | 30.0 | 30.2 | 30.4 | 30.5 | 30.7 | 30.9 | 31.1 | 31.3 | 31.5 |
| 29.5 | 29.6 | 29.8 | 30.0 | 30.2 | 30.4 | 30.6 | 30.8 | 31.0 | 31.2 | 31.4 | 31.6 | 31.8 | 32.0 |
| 30.0 | 30.1 | 30.3 | 30.5 | 30.6 | 30.8 | 31.0 | 31.2 | 31.4 | 31.6 | 31.8 | 32.0 | 32.2 | 32.4 |
| 30.5 | 30.5 | 30.7 | 30.9 | 31.1 | 31.3 | 31.5 | 31.7 | 31.9 | 32.1 | 32.3 | 32.5 | 32.7 | 32.9 |
| 31.0 | 30.9 | 31.1 | 31.3 | 31.5 | 31.7 | 31.9 | 32.1 | 32.3 | 32.5 | 32.7 | 32.9 | 33.1 | 33.3 |
| 31.5 | 31.3 | 31.5 | 31.7 | 31.9 | 32.1 | 32.4 | 32.6 | 32.8 | 33.0 | 33.2 | 33.4 | 33.6 | 33.8 |
| 32.0 | 31.7 | 32.0 | 32.2 | 32.4 | 32.6 | 32.8 | 33.0 | 33.2 | 33.4 | 33.6 | 33.8 | 34.0 | 34.3 |
| 32.5 | 32.2 | 32.4 | 32.6 | 32.8 | 33.0 | 33.2 | 33.4 | 33.6 | 33.9 | 34.1 | 34.3 | 34.5 | 34.7 |
| 33.0 | 32.6 | 32.8 | 33.0 | 33.2 | 33.4 | 33.7 | 33.9 | 34.1 | 34.3 | 34.5 | 34.7 | 34.9 | 35.2 |
| 33.5 | 33.0 | 33.2 | 33.4 | 33.7 | 33.9 | 34.1 | 34.3 | 34.5 | 34.7 | 35.0 | 35.2 | 35.4 | 35.6 |
| 34.0 | 33.4 | 33.6 | 33.9 | 34.1 | 34.3 | 34.5 | 34.7 | 35.0 | 35.2 | 35.4 | 35.6 | 35.8 | 36.1 |
| 34.5 | 33.8 | 34.1 | 34.3 | 34.5 | 34.7 | 34.9 | 35.2 | 35.4 | 35.6 | 35.8 | 36.1 | 36.3 | 36.5 |
| 35.0 | 34.3 | 34.5 | 34.7 | 34.9 | 35.2 | 35.4 | 35.6 | 35.8 | 36.1 | 36.3 | 36.5 | 36.7 | 37.0 |
| 35.5 | 34.7 | 34.9 | 35.1 | 35.3 | 35.6 | 35.8 | 36.0 | 36.3 | 36.5 | 36.7 | 36.9 | 37.2 | 37.4 |
| 36.0 | 35.1 | 35.3 | 35.5 | 35.8 | 36.0 | 36.2 | 36.5 | 36.7 | 36.9 | 37.2 | 37.4 | 37.6 | 37.9 |
| 36.5 | 35.5 | 35.7 | 36.0 | 36.2 | 36.4 | 36.7 | 36.9 | 37.1 | 37.4 | 37.6 | 37.8 | 38.1 | 38.3 |
| 37.0 | 35.9 | 36.1 | 36.4 | 36.6 | 36.8 | 37.1 | 37.3 | 37.6 | 37.8 | 38.0 | 38.3 | 38.5 | 38.7 |
| 37.5 | 36.3 | 36.6 | 36.8 | 37.0 | 37.3 | 37.5 | 37.7 | 38.0 | 38.2 | 38.5 | 38.7 | 38.9 | 39.2 |
| 38.0 | 36.7 | 37.0 | 37.2 | 37.4 | 37.7 | 37.9 | 38.2 | 38.4 | 38.7 | 38.9 | 39.1 | 39.4 | 39.6 |
| 38.5 | 37.1 | 37.4 | 37.6 | 37.9 | 38.1 | 38.4 | 38.6 | 38.8 | 39.1 | 39.3 | 39.6 | 39.8 | 40.1 |
| 39.0 | 37.5 | 37.8 | 38.0 | 38.3 | 38.5 | 38.8 | 39.0 | 39.3 | 39.5 | 39.8 | 40.0 | 40.3 | 40.5 |
| 39.5 | 38.0 | 38.2 | 38.5 | 38.7 | 38.9 | 39.2 | 39.4 | 39.7 | 39.9 | 40.2 | 40.5 | 40.7 | 41.0 |
| 40.0 | 38.4 | 38.6 | 38.9 | 39.1 | 39.4 | 39.6 | 39.9 | 40.1 | 40.4 | 40.6 | 40.9 | 41.1 | 41.4 |
| 40.5 | 38.8 | 39.0 | 39.3 | 39.5 | 39.8 | 40.0 | 40.3 | 40.5 | 40.8 | 41.1 | 41.3 | 41.6 | 41.8 |
| 41.0 | 39.2 | 39.4 | 39.7 | 39.9 | 40.2 | 40.5 | 40.7 | 41.0 | 41.2 | 41.5 | 41.7 | 42.0 | 42.3 |
| 41.5 | 39.6 | 39.8 | 40.1 | 40.4 | 40.6 | 40.9 | 41.1 | 41.4 | 41.7 | 41.9 | 42.2 | 42.4 | 42.7 |
| 42.0 | 40.0 | 40.2 | 40.5 | 40.8 | 41.0 | 41.3 | 41.6 | 41.8 | 42.1 | 42.3 | 42.6 | 42.9 | 43.1 |
| 42.5 | 40.4 | 40.6 | 40.9 | 41.2 | 41.4 | 41.7 | 42.0 | 42.2 | 42.5 | 42.8 | 43.0 | 43.3 | 43.6 |
| 43.0 | 40.8 | 41.1 | 41.3 | 41.6 | 41.9 | 42.1 | 42.4 | 42.7 | 42.9 | 43.2 | 43.5 | 43.7 | 44.0 |
| 43.5 | 41.2 | 41.5 | 41.7 | 42.0 | 42.3 | 42.5 | 42.8 | 43.1 | 43.4 | 43.6 | 43.9 | 44.2 | 44.4 |
| 44.0 | 41.6 | 41.9 | 42.1 | 42.4 | 42.7 | 43.0 | 43.2 | 43.5 | 43.8 | 44.0 | 44.3 | 44.6 | 44.9 |
| 44.5 | 42.0 | 42.3 | 42.5 | 42.8 | 43.1 | 43.4 | 43.6 | 43.9 | 44.2 | 44.5 | 44.8 | 45.0 | 45.3 |
| 45.0 | 42.4 | 42.7 | 42.9 | 43.2 | 43.5 | 43.8 | 44.1 | 44.3 | 44.6 | 44.9 | 45.2 | 45.5 | 45.7 |
| 45.5 | 42.8 | 43.1 | 43.3 | 43.6 | 43.9 | 44.2 | 44.5 | 44.8 | 45.0 | 45.3 | 45.6 | 45.9 | 46.2 |
| 46.0 | 43.2 | 43.5 | 43.8 | 44.0 | 44.3 | 44.6 | 44.9 | 45.2 | 45.5 | 45.7 | 46.0 | 46.3 | 46.6 |
| 46.5 | 43.6 | 43.9 | 44.2 | 44.4 | 44.7 | 45.0 | 45.3 | 45.6 | 45.9 | 46.2 | 46.5 | 46.7 | 47.0 |
| 47.0 | 44.0 | 44.3 | 44.6 | 44.8 | 45.1 | 45.4 | 45.7 | 46.0 | 46.3 | 46.6 | 46.9 | 47.2 | 47.5 |
| 47.5 | 44.4 | 44.7 | 45.0 | 45.2 | 45.5 | 45.8 | 46.1 | 46.4 | 46.7 | 47.0 | 47.3 | 47.6 | 47.9 |
| 48.0 | 44.8 | 45.1 | 45.4 | 45.7 | 45.9 | 46.2 | 46.5 | 46.8 | 47.1 | 47.4 | 47.7 | 48.0 | 48.3 |
| 48.5 | 45.2 | 45.5 | 45.8 | 46.1 | 46.4 | 46.6 | 46.9 | 47.2 | 47.5 | 47.8 | 48.1 | 48.4 | 48.7 |
| 49.0 | 45.6 | 45.9 | 46.2 | 46.5 | 46.8 | 47.1 | 47.4 | 47.7 | 48.0 | 48.3 | 48.6 | 48.9 | 49.2 |
| 49.5 | 46.0 | 46.3 | 46.6 | 46.9 | 47.2 | 47.5 | 47.8 | 48.1 | 48.4 | 48.7 | 49.0 | 49.3 | 49.6 |
| 50.0 | 46.4 | 46.7 | 47.0 | 47.3 | 47.6 | 47.9 | 48.2 | 48.5 | 48.8 | 49.1 | 49.4 | 49.7 | 50.0 |
| 50.5 | 46.7 | 47.0 | 47.4 | 47.7 | 48.0 | 48.3 | 48.6 | 48.9 | 49.2 | 49.5 | 49.8 | 50.1 | 50.4 |
| 51.0 | 47.1 | 47.4 | 47.8 | 48.1 | 48.4 | 48.7 | 49.0 | 49.3 | 49.6 | 49.9 | 50.2 | 50.5 | 50.9 |
| 51.5 | 47.5 | 47.8 | 48.1 | 48.5 | 48.8 | 49.1 | 49.4 | 49.7 | 50.0 | 50.3 | 50.7 | 51.0 | 51.3 |
| 52.0 | 47.9 | 48.2 | 48.5 | 48.9 | 49.2 | 49.5 | 49.8 | 50.1 | 50.4 | 50.8 | 51.1 | 51.4 | 51.7 |
| 52.5 | 48.3 | 48.6 | 48.9 | 49.3 | 49.6 | 49.9 | 50.2 | 50.5 | 50.8 | 51.2 | 51.5 | 51.8 | 52.1 |
| 53.0 | 48.7 | 49.0 | 49.3 | 49.7 | 50.0 | 50.3 | 50.6 | 50.9 | 51.3 | 51.6 | 51.9 | 52.2 | 52.5 |
| 53.5 | 49.1 | 49.4 | 49.7 | 50.0 | 50.4 | 50.7 | 51.0 | 51.3 | 51.7 | 52.0 | 52.3 | 52.6 | 53.0 |
| 54.0 | 49.5 | 49.8 | 50.1 | 50.4 | 50.8 | 51.1 | 51.4 | 51.7 | 52.1 | 52.4 | 52.7 | 53.1 | 53.4 |
| 54.5 | 49.9 | 50.2 | 50.5 | 50.8 | 51.2 | 51.5 | 51.8 | 52.2 | 52.5 | 52.8 | 53.1 | 53.5 | 53.8 |
| 55.0 | 50.3 | 50.6 | 50.9 | 51.2 | 51.6 | 51.9 | 52.2 | 52.6 | 52.9 | 53.2 | 53.6 | 53.9 | 54.2 |
| 55.5 | 50.6 | 51.0 | 51.3 | 51.6 | 52.0 | 52.3 | 52.6 | 53.0 | 53.3 | 53.6 | 54.0 | 54.3 | 54.6 |
| 56.0 | 51.0 | 51.4 | 51.7 | 52.0 | 52.4 | 52.7 | 53.0 | 53.4 | 53.7 | 54.0 | 54.4 | 54.7 | 55.1 |
| 56.5 | 51.4 | 51.7 | 52.1 | 52.4 | 52.8 | 53.1 | 53.4 | 53.8 | 54.1 | 54.5 | 54.8 | 55.1 | 55.5 |
| 57.0 | 51.8 | 52.1 | 52.5 | 52.8 | 53.2 | 53.5 | 53.8 | 54.2 | 54.5 | 54.9 | 55.2 | 55.5 | 55.9 |
| 57.5 | 52.2 | 52.5 | 52.9 | 53.2 | 53.5 | 53.9 | 54.2 | 54.6 | 54.9 | 55.3 | 55.6 | 56.0 | 56.3 |
| 58.0 | 52.6 | 52.9 | 53.3 | 53.6 | 53.9 | 54.3 | 54.6 | 55.0 | 55.3 | 55.7 | 56.0 | 56.4 | 56.7 |
| 58.5 | 52.9 | 53.3 | 53.6 | 54.0 | 54.3 | 54.7 | 55.0 | 55.4 | 55.7 | 56.1 | 56.4 | 56.8 | 57.1 |
| 59.0 | 53.3 | 53.7 | 54.0 | 54.4 | 54.7 | 55.1 | 55.4 | 55.8 | 56.1 | 56.5 | 56.8 | 57.2 | 57.5 |
| 59.5 | 53.7 | 54.1 | 54.4 | 54.8 | 55.1 | 55.5 | 55.8 | 56.2 | 56.5 | 56.9 | 57.2 | 57.6 | 58.0 |
| 60.0 | 54.1 | 54.5 | 54.8 | 55.2 | 55.5 | 55.9 | 56.2 | 56.6 | 56.9 | 57.3 | 57.7 | 58.0 | 58.4 |
| 60.5 | 54.5 | 54.8 | 55.2 | 55.5 | 55.9 | 56.3 | 56.6 | 57.0 | 57.3 | 57.7 | 58.1 | 58.4 | 58.8 |
| 61.0 | 54.9 | 55.2 | 55.6 | 55.9 | 56.3 | 56.7 | 57.0 | 57.4 | 57.7 | 58.1 | 58.5 | 58.8 | 59.2 |
| 61.5 | 55.2 | 55.6 | 56.0 | 56.3 | 56.7 | 57.1 | 57.4 | 57.8 | 58.1 | 58.5 | 58.9 | 59.2 | 59.6 |
| 62.0 | 55.6 | 56.0 | 56.3 | 56.7 | 57.1 | 57.4 | 57.8 | 58.2 | 58.5 | 58.9 | 59.3 | 59.7 | 60.0 |
| 62.5 | 56.0 | 56.4 | 56.7 | 57.1 | 57.5 | 57.8 | 58.2 | 58.6 | 58.9 | 59.3 | 59.7 | 60.1 | 60.4 |
| 63.0 | 56.4 | 56.8 | 57.1 | 57.5 | 57.9 | 58.2 | 58.6 | 59.0 | 59.3 | 59.7 | 60.1 | 60.5 | 60.8 |
| 63.5 | 56.8 | 57.1 | 57.5 | 57.9 | 58.2 | 58.6 | 59.0 | 59.4 | 59.7 | 60.1 | 60.5 | 60.9 | 61.2 |
| 64.0 | 57.1 | 57.5 | 57.9 | 58.3 | 58.6 | 59.0 | 59.4 | 59.8 | 60.1 | 60.5 | 60.9 | 61.3 | 61.7 |
| 64.5 | 57.5 | 57.9 | 58.3 | 58.6 | 59.0 | 59.4 | 59.8 | 60.2 | 60.5 | 60.9 | 61.3 | 61.7 | 62.1 |
| 65.0 | 57.9 | 58.3 | 58.7 | 59.0 | 59.4 | 59.8 | 60.2 | 60.6 | 60.9 | 61.3 | 61.7 | 62.1 | 62.5 |
| 65.5 | 58.3 | 58.7 | 59.0 | 59.4 | 59.8 | 60.2 | 60.6 | 60.9 | 61.3 | 61.7 | 62.1 | 62.5 | 62.9 |
| 66.0 | 58.7 | 59.0 | 59.4 | 59.8 | 60.2 | 60.6 | 61.0 | 61.3 | 61.7 | 62.1 | 62.5 | 62.9 | 63.3 |
| 66.5 | 59.0 | 59.4 | 59.8 | 60.2 | 60.6 | 61.0 | 61.3 | 61.7 | 62.1 | 62.5 | 62.9 | 63.3 | 63.7 |
| 67.0 | 59.4 | 59.8 | 60.2 | 60.6 | 61.0 | 61.3 | 61.7 | 62.1 | 62.5 | 62.9 | 63.3 | 63.7 | 64.1 |
| 67.5 | 59.8 | 60.2 | 60.6 | 61.0 | 61.3 | 61.7 | 62.1 | 62.5 | 62.9 | 63.3 | 63.7 | 64.1 | 64.5 |
| 68.0 | 60.2 | 60.5 | 60.9 | 61.3 | 61.7 | 62.1 | 62.5 | 62.9 | 63.3 | 63.7 | 64.1 | 64.5 | 64.9 |
| 68.5 | 60.5 | 60.9 | 61.3 | 61.7 | 62.1 | 62.5 | 62.9 | 63.3 | 63.7 | 64.1 | 64.5 | 64.9 | 65.3 |
| 69.0 | 60.9 | 61.3 | 61.7 | 62.1 | 62.5 | 62.9 | 63.3 | 63.7 | 64.1 | 64.5 | 64.9 | 65.3 | 65.7 |
| 69.5 | 61.3 | 61.7 | 62.1 | 62.5 | 62.9 | 63.3 | 63.7 | 64.1 | 64.5 | 64.9 | 65.3 | 65.7 | 66.1 |
| 70.0 | 61.7 | 62.1 | 62.5 | 62.9 | 63.3 | 63.7 | 64.1 | 64.5 | 64.9 | 65.3 | 65.7 | 66.1 | 66.5 |
| 70.5 | 62.0 | 62.4 | 62.8 | 63.2 | 63.6 | 64.1 | 64.5 | 64.9 | 65.3 | 65.7 | 66.1 | 66.5 | 66.9 |
| 71.0 | 62.4 | 62.8 | 63.2 | 63.6 | 64.0 | 64.4 | 64.9 | 65.3 | 65.7 | 66.1 | 66.5 | 66.9 | 67.3 |
| 71.5 | 62.8 | 63.2 | 63.6 | 64.0 | 64.4 | 64.8 | 65.2 | 65.7 | 66.1 | 66.5 | 66.9 | 67.3 | 67.7 |
| 72.0 | 63.1 | 63.6 | 64.0 | 64.4 | 64.8 | 65.2 | 65.6 | 66.0 | 66.5 | 66.9 | 67.3 | 67.7 | 68.1 |
| 72.5 | 63.5 | 63.9 | 64.3 | 64.8 | 65.2 | 65.6 | 66.0 | 66.4 | 66.8 | 67.3 | 67.7 | 68.1 | 68.5 |
| 73.0 | 63.9 | 64.3 | 64.7 | 65.1 | 65.6 | 66.0 | 66.4 | 66.8 | 67.2 | 67.7 | 68.1 | 68.5 | 68.9 |
| 73.5 | 64.3 | 64.7 | 65.1 | 65.5 | 65.9 | 66.4 | 66.8 | 67.2 | 67.6 | 68.1 | 68.5 | 68.9 | 69.3 |
| 74.0 | 64.6 | 65.0 | 65.5 | 65.9 | 66.3 | 66.7 | 67.2 | 67.6 | 68.0 | 68.4 | 68.9 | 69.3 | 69.7 |
| 74.5 | 65.0 | 65.4 | 65.8 | 66.3 | 66.7 | 67.1 | 67.6 | 68.0 | 68.4 | 68.8 | 69.3 | 69.7 | / |
| 75.0 | 65.4 | 65.8 | 66.2 | 66.6 | 67.1 | 67.5 | 67.9 | 68.4 | 68.8 | 69.2 | 69.7 | / | / |
| 75.5 | 65.7 | 66.2 | 66.6 | 67.0 | 67.5 | 67.9 | 68.3 | 68.8 | 69.2 | 69.6 | / | / | / |
| 76.0 | 66.1 | 66.5 | 67.0 | 67.4 | 67.8 | 68.3 | 68.7 | 69.1 | 69.6 | / | / | / | / |
| 76.5 | 66.5 | 66.9 | 67.3 | 67.8 | 68.2 | 68.6 | 69.1 | 69.5 | 70.0 | / | / | / | / |
| 77.0 | 66.8 | 67.3 | 67.7 | 68.2 | 68.6 | 69.0 | 69.5 | 69.9 | / | / | / | / | / |
| 77.5 | 67.2 | 67.6 | 68.1 | 68.5 | 69.0 | 69.4 | 69.8 | / | / | / | / | / | / |
| 78.0 | 67.6 | 68.0 | 68.5 | 68.9 | 69.3 | 69.8 | / | / | / | / | / | / | / |
| 78.5 | 67.9 | 68.4 | 68.8 | 69.3 | 69.7 | / | / | / | / | / | / | / | / |
| 79.0 | 68.3 | 68.8 | 69.2 | 69.6 | / | / | / | / | / | / | / | / | / |
| 79.5 | 68.7 | 69.1 | 69.6 | / | / | / | / | / | / | / | / | / | / |
| 80.0 | 69.0 | 69.5 | 69.9 | / | / | / | / | / | / | / | / | / | / |
| 80.5 | 69.4 | 69.9 | / | / | / | / | / | / | / | / | / | / | / |
| 81.0 | 69.8 | / | / | / | / | / | / | / | / | / | / | / | / |
| 81.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 82.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 82.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 83.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 83.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 84.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 84.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 85.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 85.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 86.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 86.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 87.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 87.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 88.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 88.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 89.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 89.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 90.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |

| 续表B | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值*f c cu* (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值*v*（km/s） | | | | | | | | | | | | |
| 4.48 | 4.50 | 4.52 | 4.54 | 4.56 | 4.58 | 4.60 | 4.62 | 4.64 | 4.66 | 4.68 | 4.70 | 4.72 |
| 28.0 | 30.8 | 31.0 | 31.2 | 31.3 | 31.5 | 31.7 | 31.9 | 32.1 | 32.3 | 32.5 | 32.7 | 32.9 | 33.1 |
| 28.5 | 31.2 | 31.4 | 31.6 | 31.8 | 32.0 | 32.2 | 32.4 | 32.6 | 32.8 | 33.0 | 33.2 | 33.4 | 33.6 |
| 29.0 | 31.7 | 31.9 | 32.1 | 32.3 | 32.5 | 32.7 | 32.9 | 33.1 | 33.3 | 33.5 | 33.7 | 33.9 | 34.1 |
| 29.5 | 32.2 | 32.4 | 32.6 | 32.8 | 33.0 | 33.2 | 33.4 | 33.6 | 33.8 | 34.0 | 34.2 | 34.4 | 34.6 |
| 30.0 | 32.6 | 32.8 | 33.0 | 33.2 | 33.4 | 33.6 | 33.8 | 34.0 | 34.2 | 34.5 | 34.7 | 34.9 | 35.1 |
| 30.5 | 33.1 | 33.3 | 33.5 | 33.7 | 33.9 | 34.1 | 34.3 | 34.5 | 34.7 | 34.9 | 35.1 | 35.4 | 35.6 |
| 31.0 | 33.6 | 33.8 | 34.0 | 34.2 | 34.4 | 34.6 | 34.8 | 35.0 | 35.2 | 35.4 | 35.6 | 35.8 | 36.1 |
| 31.5 | 34.0 | 34.2 | 34.4 | 34.6 | 34.9 | 35.1 | 35.3 | 35.5 | 35.7 | 35.9 | 36.1 | 36.3 | 36.5 |
| 32.0 | 34.5 | 34.7 | 34.9 | 35.1 | 35.3 | 35.5 | 35.7 | 36.0 | 36.2 | 36.4 | 36.6 | 36.8 | 37.0 |
| 32.5 | 34.9 | 35.1 | 35.4 | 35.6 | 35.8 | 36.0 | 36.2 | 36.4 | 36.7 | 36.9 | 37.1 | 37.3 | 37.5 |
| 33.0 | 35.4 | 35.6 | 35.8 | 36.0 | 36.3 | 36.5 | 36.7 | 36.9 | 37.1 | 37.4 | 37.6 | 37.8 | 38.0 |
| 33.5 | 35.8 | 36.1 | 36.3 | 36.5 | 36.7 | 36.9 | 37.2 | 37.4 | 37.6 | 37.8 | 38.1 | 38.3 | 38.5 |
| 34.0 | 36.3 | 36.5 | 36.7 | 37.0 | 37.2 | 37.4 | 37.6 | 37.9 | 38.1 | 38.3 | 38.5 | 38.8 | 39.0 |
| 34.5 | 36.7 | 37.0 | 37.2 | 37.4 | 37.6 | 37.9 | 38.1 | 38.3 | 38.6 | 38.8 | 39.0 | 39.2 | 39.5 |
| 35.0 | 37.2 | 37.4 | 37.6 | 37.9 | 38.1 | 38.3 | 38.6 | 38.8 | 39.0 | 39.3 | 39.5 | 39.7 | 40.0 |
| 35.5 | 37.6 | 37.9 | 38.1 | 38.3 | 38.6 | 38.8 | 39.0 | 39.3 | 39.5 | 39.7 | 40.0 | 40.2 | 40.4 |
| 36.0 | 38.1 | 38.3 | 38.6 | 38.8 | 39.0 | 39.3 | 39.5 | 39.7 | 40.0 | 40.2 | 40.4 | 40.7 | 40.9 |
| 36.5 | 38.5 | 38.8 | 39.0 | 39.2 | 39.5 | 39.7 | 40.0 | 40.2 | 40.4 | 40.7 | 40.9 | 41.2 | 41.4 |
| 37.0 | 39.0 | 39.2 | 39.5 | 39.7 | 39.9 | 40.2 | 40.4 | 40.7 | 40.9 | 41.2 | 41.4 | 41.6 | 41.9 |
| 37.5 | 39.4 | 39.7 | 39.9 | 40.2 | 40.4 | 40.6 | 40.9 | 41.1 | 41.4 | 41.6 | 41.9 | 42.1 | 42.4 |
| 38.0 | 39.9 | 40.1 | 40.4 | 40.6 | 40.9 | 41.1 | 41.4 | 41.6 | 41.8 | 42.1 | 42.3 | 42.6 | 42.8 |
| 38.5 | 40.3 | 40.6 | 40.8 | 41.1 | 41.3 | 41.6 | 41.8 | 42.1 | 42.3 | 42.6 | 42.8 | 43.1 | 43.3 |
| 39.0 | 40.8 | 41.0 | 41.3 | 41.5 | 41.8 | 42.0 | 42.3 | 42.5 | 42.8 | 43.0 | 43.3 | 43.5 | 43.8 |
| 39.5 | 41.2 | 41.5 | 41.7 | 42.0 | 42.2 | 42.5 | 42.7 | 43.0 | 43.2 | 43.5 | 43.8 | 44.0 | 44.3 |
| 40.0 | 41.6 | 41.9 | 42.2 | 42.4 | 42.7 | 42.9 | 43.2 | 43.4 | 43.7 | 44.0 | 44.2 | 44.5 | 44.7 |
| 40.5 | 42.1 | 42.3 | 42.6 | 42.9 | 43.1 | 43.4 | 43.6 | 43.9 | 44.2 | 44.4 | 44.7 | 45.0 | 45.2 |
| 41.0 | 42.5 | 42.8 | 43.1 | 43.3 | 43.6 | 43.8 | 44.1 | 44.4 | 44.6 | 44.9 | 45.2 | 45.4 | 45.7 |
| 41.5 | 43.0 | 43.2 | 43.5 | 43.8 | 44.0 | 44.3 | 44.6 | 44.8 | 45.1 | 45.4 | 45.6 | 45.9 | 46.2 |
| 42.0 | 43.4 | 43.7 | 43.9 | 44.2 | 44.5 | 44.7 | 45.0 | 45.3 | 45.6 | 45.8 | 46.1 | 46.4 | 46.6 |
| 42.5 | 43.8 | 44.1 | 44.4 | 44.7 | 44.9 | 45.2 | 45.5 | 45.7 | 46.0 | 46.3 | 46.6 | 46.8 | 47.1 |
| 43.0 | 44.3 | 44.6 | 44.8 | 45.1 | 45.4 | 45.6 | 45.9 | 46.2 | 46.5 | 46.7 | 47.0 | 47.3 | 47.6 |
| 43.5 | 44.7 | 45.0 | 45.3 | 45.5 | 45.8 | 46.1 | 46.4 | 46.7 | 46.9 | 47.2 | 47.5 | 47.8 | 48.0 |
| 44.0 | 45.2 | 45.4 | 45.7 | 46.0 | 46.3 | 46.5 | 46.8 | 47.1 | 47.4 | 47.7 | 47.9 | 48.2 | 48.5 |
| 44.5 | 45.6 | 45.9 | 46.1 | 46.4 | 46.7 | 47.0 | 47.3 | 47.6 | 47.8 | 48.1 | 48.4 | 48.7 | 49.0 |
| 45.0 | 46.0 | 46.3 | 46.6 | 46.9 | 47.2 | 47.4 | 47.7 | 48.0 | 48.3 | 48.6 | 48.9 | 49.2 | 49.4 |
| 45.5 | 46.5 | 46.7 | 47.0 | 47.3 | 47.6 | 47.9 | 48.2 | 48.5 | 48.8 | 49.0 | 49.3 | 49.6 | 49.9 |
| 46.0 | 46.9 | 47.2 | 47.5 | 47.8 | 48.0 | 48.3 | 48.6 | 48.9 | 49.2 | 49.5 | 49.8 | 50.1 | 50.4 |
| 46.5 | 47.3 | 47.6 | 47.9 | 48.2 | 48.5 | 48.8 | 49.1 | 49.4 | 49.7 | 50.0 | 50.2 | 50.5 | 50.8 |
| 47.0 | 47.8 | 48.0 | 48.3 | 48.6 | 48.9 | 49.2 | 49.5 | 49.8 | 50.1 | 50.4 | 50.7 | 51.0 | 51.3 |
| 47.5 | 48.2 | 48.5 | 48.8 | 49.1 | 49.4 | 49.7 | 50.0 | 50.3 | 50.6 | 50.9 | 51.2 | 51.5 | 51.8 |
| 48.0 | 48.6 | 48.9 | 49.2 | 49.5 | 49.8 | 50.1 | 50.4 | 50.7 | 51.0 | 51.3 | 51.6 | 51.9 | 52.2 |
| 48.5 | 49.0 | 49.3 | 49.6 | 49.9 | 50.2 | 50.6 | 50.9 | 51.2 | 51.5 | 51.8 | 52.1 | 52.4 | 52.7 |
| 49.0 | 49.5 | 49.8 | 50.1 | 50.4 | 50.7 | 51.0 | 51.3 | 51.6 | 51.9 | 52.2 | 52.5 | 52.8 | 53.1 |
| 49.5 | 49.9 | 50.2 | 50.5 | 50.8 | 51.1 | 51.4 | 51.7 | 52.1 | 52.4 | 52.7 | 53.0 | 53.3 | 53.6 |
| 50.0 | 50.3 | 50.6 | 50.9 | 51.3 | 51.6 | 51.9 | 52.2 | 52.5 | 52.8 | 53.1 | 53.4 | 53.8 | 54.1 |
| 50.5 | 50.7 | 51.1 | 51.4 | 51.7 | 52.0 | 52.3 | 52.6 | 52.9 | 53.3 | 53.6 | 53.9 | 54.2 | 54.5 |
| 51.0 | 51.2 | 51.5 | 51.8 | 52.1 | 52.4 | 52.8 | 53.1 | 53.4 | 53.7 | 54.0 | 54.3 | 54.7 | 55.0 |
| 51.5 | 51.6 | 51.9 | 52.2 | 52.6 | 52.9 | 53.2 | 53.5 | 53.8 | 54.2 | 54.5 | 54.8 | 55.1 | 55.4 |
| 52.0 | 52.0 | 52.3 | 52.7 | 53.0 | 53.3 | 53.6 | 54.0 | 54.3 | 54.6 | 54.9 | 55.2 | 55.6 | 55.9 |
| 52.5 | 52.4 | 52.8 | 53.1 | 53.4 | 53.7 | 54.1 | 54.4 | 54.7 | 55.0 | 55.4 | 55.7 | 56.0 | 56.4 |
| 53.0 | 52.9 | 53.2 | 53.5 | 53.8 | 54.2 | 54.5 | 54.8 | 55.2 | 55.5 | 55.8 | 56.1 | 56.5 | 56.8 |
| 53.5 | 53.3 | 53.6 | 53.9 | 54.3 | 54.6 | 54.9 | 55.3 | 55.6 | 55.9 | 56.3 | 56.6 | 56.9 | 57.3 |
| 54.0 | 53.7 | 54.0 | 54.4 | 54.7 | 55.0 | 55.4 | 55.7 | 56.0 | 56.4 | 56.7 | 57.0 | 57.4 | 57.7 |
| 54.5 | 54.1 | 54.5 | 54.8 | 55.1 | 55.5 | 55.8 | 56.1 | 56.5 | 56.8 | 57.2 | 57.5 | 57.8 | 58.2 |
| 55.0 | 54.6 | 54.9 | 55.2 | 55.6 | 55.9 | 56.2 | 56.6 | 56.9 | 57.3 | 57.6 | 57.9 | 58.3 | 58.6 |
| 55.5 | 55.0 | 55.3 | 55.7 | 56.0 | 56.3 | 56.7 | 57.0 | 57.4 | 57.7 | 58.0 | 58.4 | 58.7 | 59.1 |
| 56.0 | 55.4 | 55.7 | 56.1 | 56.4 | 56.8 | 57.1 | 57.4 | 57.8 | 58.1 | 58.5 | 58.8 | 59.2 | 59.5 |
| 56.5 | 55.8 | 56.2 | 56.5 | 56.8 | 57.2 | 57.5 | 57.9 | 58.2 | 58.6 | 58.9 | 59.3 | 59.6 | 60.0 |
| 57.0 | 56.2 | 56.6 | 56.9 | 57.3 | 57.6 | 58.0 | 58.3 | 58.7 | 59.0 | 59.4 | 59.7 | 60.1 | 60.4 |
| 57.5 | 56.7 | 57.0 | 57.4 | 57.7 | 58.0 | 58.4 | 58.8 | 59.1 | 59.5 | 59.8 | 60.2 | 60.5 | 60.9 |
| 58.0 | 57.1 | 57.4 | 57.8 | 58.1 | 58.5 | 58.8 | 59.2 | 59.5 | 59.9 | 60.2 | 60.6 | 61.0 | 61.3 |
| 58.5 | 57.5 | 57.8 | 58.2 | 58.5 | 58.9 | 59.3 | 59.6 | 60.0 | 60.3 | 60.7 | 61.0 | 61.4 | 61.8 |
| 59.0 | 57.9 | 58.3 | 58.6 | 59.0 | 59.3 | 59.7 | 60.0 | 60.4 | 60.8 | 61.1 | 61.5 | 61.8 | 62.2 |
| 59.5 | 58.3 | 58.7 | 59.0 | 59.4 | 59.8 | 60.1 | 60.5 | 60.8 | 61.2 | 61.6 | 61.9 | 62.3 | 62.7 |
| 60.0 | 58.7 | 59.1 | 59.5 | 59.8 | 60.2 | 60.5 | 60.9 | 61.3 | 61.6 | 62.0 | 62.4 | 62.7 | 63.1 |
| 60.5 | 59.1 | 59.5 | 59.9 | 60.2 | 60.6 | 61.0 | 61.3 | 61.7 | 62.1 | 62.4 | 62.8 | 63.2 | 63.6 |
| 61.0 | 59.6 | 59.9 | 60.3 | 60.7 | 61.0 | 61.4 | 61.8 | 62.1 | 62.5 | 62.9 | 63.3 | 63.6 | 64.0 |
| 61.5 | 60.0 | 60.3 | 60.7 | 61.1 | 61.5 | 61.8 | 62.2 | 62.6 | 62.9 | 63.3 | 63.7 | 64.1 | 64.4 |
| 62.0 | 60.4 | 60.8 | 61.1 | 61.5 | 61.9 | 62.3 | 62.6 | 63.0 | 63.4 | 63.8 | 64.1 | 64.5 | 64.9 |
| 62.5 | 60.8 | 61.2 | 61.6 | 61.9 | 62.3 | 62.7 | 63.1 | 63.4 | 63.8 | 64.2 | 64.6 | 64.9 | 65.3 |
| 63.0 | 61.2 | 61.6 | 62.0 | 62.3 | 62.7 | 63.1 | 63.5 | 63.9 | 64.2 | 64.6 | 65.0 | 65.4 | 65.8 |
| 63.5 | 61.6 | 62.0 | 62.4 | 62.8 | 63.1 | 63.5 | 63.9 | 64.3 | 64.7 | 65.1 | 65.4 | 65.8 | 66.2 |
| 64.0 | 62.0 | 62.4 | 62.8 | 63.2 | 63.6 | 64.0 | 64.3 | 64.7 | 65.1 | 65.5 | 65.9 | 66.3 | 66.7 |
| 64.5 | 62.4 | 62.8 | 63.2 | 63.6 | 64.0 | 64.4 | 64.8 | 65.1 | 65.5 | 65.9 | 66.3 | 66.7 | 67.1 |
| 65.0 | 62.9 | 63.2 | 63.6 | 64.0 | 64.4 | 64.8 | 65.2 | 65.6 | 66.0 | 66.4 | 66.8 | 67.1 | 67.5 |
| 65.5 | 63.3 | 63.7 | 64.0 | 64.4 | 64.8 | 65.2 | 65.6 | 66.0 | 66.4 | 66.8 | 67.2 | 67.6 | 68.0 |
| 66.0 | 63.7 | 64.1 | 64.5 | 64.9 | 65.2 | 65.6 | 66.0 | 66.4 | 66.8 | 67.2 | 67.6 | 68.0 | 68.4 |
| 66.5 | 64.1 | 64.5 | 64.9 | 65.3 | 65.7 | 66.1 | 66.5 | 66.9 | 67.3 | 67.7 | 68.1 | 68.5 | 68.9 |
| 67.0 | 64.5 | 64.9 | 65.3 | 65.7 | 66.1 | 66.5 | 66.9 | 67.3 | 67.7 | 68.1 | 68.5 | 68.9 | 69.3 |
| 67.5 | 64.9 | 65.3 | 65.7 | 66.1 | 66.5 | 66.9 | 67.3 | 67.7 | 68.1 | 68.5 | 68.9 | 69.3 | 69.7 |
| 68.0 | 65.3 | 65.7 | 66.1 | 66.5 | 66.9 | 67.3 | 67.7 | 68.1 | 68.5 | 68.9 | 69.4 | 69.8 | / |
| 68.5 | 65.7 | 66.1 | 66.5 | 66.9 | 67.3 | 67.7 | 68.1 | 68.6 | 69.0 | 69.4 | 69.8 | / | / |
| 69.0 | 66.1 | 66.5 | 66.9 | 67.3 | 67.8 | 68.2 | 68.6 | 69.0 | 69.4 | 69.8 | / | / | / |
| 69.5 | 66.5 | 66.9 | 67.3 | 67.8 | 68.2 | 68.6 | 69.0 | 69.4 | 69.8 | / | / | / | / |
| 70.0 | 66.9 | 67.3 | 67.8 | 68.2 | 68.6 | 69.0 | 69.4 | 69.8 | / | / | / | / | / |
| 70.5 | 67.3 | 67.8 | 68.2 | 68.6 | 69.0 | 69.4 | 69.8 | / | / | / | / | / | / |
| 71.0 | 67.7 | 68.2 | 68.6 | 69.0 | 69.4 | 69.8 | / | / | / | / | / | / | / |
| 71.5 | 68.1 | 68.6 | 69.0 | 69.4 | 69.8 | / | / | / | / | / | / | / | / |
| 72.0 | 68.6 | 69.0 | 69.4 | 69.8 | / | / | / | / | / | / | / | / | / |
| 72.5 | 69.0 | 69.4 | 69.8 | / | / | / | / | / | / | / | / | / | / |
| 73.0 | 69.4 | 69.8 | / | / | / | / | / | / | / | / | / | / | / |
| 73.5 | 69.8 | / | / | / | / | / | / | / | / | / | / | / | / |
| 74.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 74.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 75.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 75.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 76.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 76.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 77.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 77.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 78.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 78.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 79.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 79.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 80.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |

| 续表B | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值*f c cu* (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值*v*（km/s） | | | | | | | | | | | | |
| 4.74 | 4.76 | 4.78 | 4.80 | 4.82 | 4.84 | 4.86 | 4.88 | 4.90 | 4.92 | 4.94 | 4.96 | 4.98 |
| 28.0 | 33.3 | 33.5 | 33.7 | 33.8 | 34.0 | 34.2 | 34.4 | 34.6 | 34.8 | 35.0 | 35.2 | 35.4 | 35.6 |
| 28.5 | 33.8 | 34.0 | 34.2 | 34.4 | 34.6 | 34.8 | 34.9 | 35.1 | 35.3 | 35.5 | 35.7 | 35.9 | 36.1 |
| 29.0 | 34.3 | 34.5 | 34.7 | 34.9 | 35.1 | 35.3 | 35.5 | 35.7 | 35.9 | 36.1 | 36.3 | 36.5 | 36.7 |
| 29.5 | 34.8 | 35.0 | 35.2 | 35.4 | 35.6 | 35.8 | 36.0 | 36.2 | 36.4 | 36.6 | 36.8 | 37.0 | 37.2 |
| 30.0 | 35.3 | 35.5 | 35.7 | 35.9 | 36.1 | 36.3 | 36.5 | 36.7 | 36.9 | 37.1 | 37.3 | 37.5 | 37.7 |
| 30.5 | 35.8 | 36.0 | 36.2 | 36.4 | 36.6 | 36.8 | 37.0 | 37.2 | 37.4 | 37.6 | 37.9 | 38.1 | 38.3 |
| 31.0 | 36.3 | 36.5 | 36.7 | 36.9 | 37.1 | 37.3 | 37.5 | 37.7 | 38.0 | 38.2 | 38.4 | 38.6 | 38.8 |
| 31.5 | 36.8 | 37.0 | 37.2 | 37.4 | 37.6 | 37.8 | 38.0 | 38.3 | 38.5 | 38.7 | 38.9 | 39.1 | 39.3 |
| 32.0 | 37.3 | 37.5 | 37.7 | 37.9 | 38.1 | 38.3 | 38.6 | 38.8 | 39.0 | 39.2 | 39.4 | 39.6 | 39.9 |
| 32.5 | 37.7 | 38.0 | 38.2 | 38.4 | 38.6 | 38.8 | 39.1 | 39.3 | 39.5 | 39.7 | 40.0 | 40.2 | 40.4 |
| 33.0 | 38.2 | 38.5 | 38.7 | 38.9 | 39.1 | 39.3 | 39.6 | 39.8 | 40.0 | 40.2 | 40.5 | 40.7 | 40.9 |
| 33.5 | 38.7 | 39.0 | 39.2 | 39.4 | 39.6 | 39.9 | 40.1 | 40.3 | 40.5 | 40.8 | 41.0 | 41.2 | 41.4 |
| 34.0 | 39.2 | 39.4 | 39.7 | 39.9 | 40.1 | 40.4 | 40.6 | 40.8 | 41.0 | 41.3 | 41.5 | 41.7 | 42.0 |
| 34.5 | 39.7 | 39.9 | 40.2 | 40.4 | 40.6 | 40.9 | 41.1 | 41.3 | 41.6 | 41.8 | 42.0 | 42.3 | 42.5 |
| 35.0 | 40.2 | 40.4 | 40.7 | 40.9 | 41.1 | 41.4 | 41.6 | 41.8 | 42.1 | 42.3 | 42.5 | 42.8 | 43.0 |
| 35.5 | 40.7 | 40.9 | 41.2 | 41.4 | 41.6 | 41.9 | 42.1 | 42.3 | 42.6 | 42.8 | 43.1 | 43.3 | 43.5 |
| 36.0 | 41.2 | 41.4 | 41.6 | 41.9 | 42.1 | 42.4 | 42.6 | 42.8 | 43.1 | 43.3 | 43.6 | 43.8 | 44.1 |
| 36.5 | 41.6 | 41.9 | 42.1 | 42.4 | 42.6 | 42.9 | 43.1 | 43.3 | 43.6 | 43.8 | 44.1 | 44.3 | 44.6 |
| 37.0 | 42.1 | 42.4 | 42.6 | 42.9 | 43.1 | 43.4 | 43.6 | 43.9 | 44.1 | 44.3 | 44.6 | 44.8 | 45.1 |
| 37.5 | 42.6 | 42.9 | 43.1 | 43.4 | 43.6 | 43.9 | 44.1 | 44.4 | 44.6 | 44.9 | 45.1 | 45.4 | 45.6 |
| 38.0 | 43.1 | 43.3 | 43.6 | 43.8 | 44.1 | 44.3 | 44.6 | 44.9 | 45.1 | 45.4 | 45.6 | 45.9 | 46.1 |
| 38.5 | 43.6 | 43.8 | 44.1 | 44.3 | 44.6 | 44.8 | 45.1 | 45.4 | 45.6 | 45.9 | 46.1 | 46.4 | 46.6 |
| 39.0 | 44.1 | 44.3 | 44.6 | 44.8 | 45.1 | 45.3 | 45.6 | 45.9 | 46.1 | 46.4 | 46.6 | 46.9 | 47.1 |
| 39.5 | 44.5 | 44.8 | 45.0 | 45.3 | 45.6 | 45.8 | 46.1 | 46.4 | 46.6 | 46.9 | 47.1 | 47.4 | 47.7 |
| 40.0 | 45.0 | 45.3 | 45.5 | 45.8 | 46.1 | 46.3 | 46.6 | 46.8 | 47.1 | 47.4 | 47.6 | 47.9 | 48.2 |
| 40.5 | 45.5 | 45.7 | 46.0 | 46.3 | 46.5 | 46.8 | 47.1 | 47.3 | 47.6 | 47.9 | 48.1 | 48.4 | 48.7 |
| 41.0 | 46.0 | 46.2 | 46.5 | 46.8 | 47.0 | 47.3 | 47.6 | 47.8 | 48.1 | 48.4 | 48.6 | 48.9 | 49.2 |
| 41.5 | 46.4 | 46.7 | 47.0 | 47.2 | 47.5 | 47.8 | 48.1 | 48.3 | 48.6 | 48.9 | 49.2 | 49.4 | 49.7 |
| 42.0 | 46.9 | 47.2 | 47.5 | 47.7 | 48.0 | 48.3 | 48.6 | 48.8 | 49.1 | 49.4 | 49.7 | 49.9 | 50.2 |
| 42.5 | 47.4 | 47.7 | 47.9 | 48.2 | 48.5 | 48.8 | 49.0 | 49.3 | 49.6 | 49.9 | 50.2 | 50.4 | 50.7 |
| 43.0 | 47.9 | 48.1 | 48.4 | 48.7 | 49.0 | 49.2 | 49.5 | 49.8 | 50.1 | 50.4 | 50.7 | 50.9 | 51.2 |
| 43.5 | 48.3 | 48.6 | 48.9 | 49.2 | 49.5 | 49.7 | 50.0 | 50.3 | 50.6 | 50.9 | 51.2 | 51.4 | 51.7 |
| 44.0 | 48.8 | 49.1 | 49.4 | 49.6 | 49.9 | 50.2 | 50.5 | 50.8 | 51.1 | 51.4 | 51.7 | 51.9 | 52.2 |
| 44.5 | 49.3 | 49.6 | 49.8 | 50.1 | 50.4 | 50.7 | 51.0 | 51.3 | 51.6 | 51.9 | 52.1 | 52.4 | 52.7 |
| 45.0 | 49.7 | 50.0 | 50.3 | 50.6 | 50.9 | 51.2 | 51.5 | 51.8 | 52.1 | 52.4 | 52.6 | 52.9 | 53.2 |
| 45.5 | 50.2 | 50.5 | 50.8 | 51.1 | 51.4 | 51.7 | 52.0 | 52.3 | 52.5 | 52.8 | 53.1 | 53.4 | 53.7 |
| 46.0 | 50.7 | 51.0 | 51.3 | 51.6 | 51.9 | 52.1 | 52.4 | 52.7 | 53.0 | 53.3 | 53.6 | 53.9 | 54.2 |
| 46.5 | 51.1 | 51.4 | 51.7 | 52.0 | 52.3 | 52.6 | 52.9 | 53.2 | 53.5 | 53.8 | 54.1 | 54.4 | 54.7 |
| 47.0 | 51.6 | 51.9 | 52.2 | 52.5 | 52.8 | 53.1 | 53.4 | 53.7 | 54.0 | 54.3 | 54.6 | 54.9 | 55.2 |
| 47.5 | 52.1 | 52.4 | 52.7 | 53.0 | 53.3 | 53.6 | 53.9 | 54.2 | 54.5 | 54.8 | 55.1 | 55.4 | 55.7 |
| 48.0 | 52.5 | 52.8 | 53.1 | 53.4 | 53.8 | 54.1 | 54.4 | 54.7 | 55.0 | 55.3 | 55.6 | 55.9 | 56.2 |
| 48.5 | 53.0 | 53.3 | 53.6 | 53.9 | 54.2 | 54.5 | 54.9 | 55.2 | 55.5 | 55.8 | 56.1 | 56.4 | 56.7 |
| 49.0 | 53.5 | 53.8 | 54.1 | 54.4 | 54.7 | 55.0 | 55.3 | 55.6 | 56.0 | 56.3 | 56.6 | 56.9 | 57.2 |
| 49.5 | 53.9 | 54.2 | 54.5 | 54.9 | 55.2 | 55.5 | 55.8 | 56.1 | 56.4 | 56.8 | 57.1 | 57.4 | 57.7 |
| 50.0 | 54.4 | 54.7 | 55.0 | 55.3 | 55.6 | 56.0 | 56.3 | 56.6 | 56.9 | 57.2 | 57.6 | 57.9 | 58.2 |
| 50.5 | 54.8 | 55.2 | 55.5 | 55.8 | 56.1 | 56.4 | 56.8 | 57.1 | 57.4 | 57.7 | 58.1 | 58.4 | 58.7 |
| 51.0 | 55.3 | 55.6 | 55.9 | 56.3 | 56.6 | 56.9 | 57.2 | 57.6 | 57.9 | 58.2 | 58.5 | 58.9 | 59.2 |
| 51.5 | 55.8 | 56.1 | 56.4 | 56.7 | 57.1 | 57.4 | 57.7 | 58.0 | 58.4 | 58.7 | 59.0 | 59.4 | 59.7 |
| 52.0 | 56.2 | 56.5 | 56.9 | 57.2 | 57.5 | 57.9 | 58.2 | 58.5 | 58.8 | 59.2 | 59.5 | 59.8 | 60.2 |
| 52.5 | 56.7 | 57.0 | 57.3 | 57.7 | 58.0 | 58.3 | 58.7 | 59.0 | 59.3 | 59.7 | 60.0 | 60.3 | 60.7 |
| 53.0 | 57.1 | 57.5 | 57.8 | 58.1 | 58.5 | 58.8 | 59.1 | 59.5 | 59.8 | 60.1 | 60.5 | 60.8 | 61.2 |
| 53.5 | 57.6 | 57.9 | 58.3 | 58.6 | 58.9 | 59.3 | 59.6 | 59.9 | 60.3 | 60.6 | 61.0 | 61.3 | 61.6 |
| 54.0 | 58.0 | 58.4 | 58.7 | 59.1 | 59.4 | 59.7 | 60.1 | 60.4 | 60.8 | 61.1 | 61.4 | 61.8 | 62.1 |
| 54.5 | 58.5 | 58.8 | 59.2 | 59.5 | 59.9 | 60.2 | 60.6 | 60.9 | 61.2 | 61.6 | 61.9 | 62.3 | 62.6 |
| 55.0 | 59.0 | 59.3 | 59.6 | 60.0 | 60.3 | 60.7 | 61.0 | 61.4 | 61.7 | 62.1 | 62.4 | 62.8 | 63.1 |
| 55.5 | 59.4 | 59.8 | 60.1 | 60.5 | 60.8 | 61.1 | 61.5 | 61.8 | 62.2 | 62.5 | 62.9 | 63.2 | 63.6 |
| 56.0 | 59.9 | 60.2 | 60.6 | 60.9 | 61.3 | 61.6 | 62.0 | 62.3 | 62.7 | 63.0 | 63.4 | 63.7 | 64.1 |
| 56.5 | 60.3 | 60.7 | 61.0 | 61.4 | 61.7 | 62.1 | 62.4 | 62.8 | 63.1 | 63.5 | 63.8 | 64.2 | 64.6 |
| 57.0 | 60.8 | 61.1 | 61.5 | 61.8 | 62.2 | 62.5 | 62.9 | 63.3 | 63.6 | 64.0 | 64.3 | 64.7 | 65.0 |
| 57.5 | 61.2 | 61.6 | 61.9 | 62.3 | 62.6 | 63.0 | 63.4 | 63.7 | 64.1 | 64.4 | 64.8 | 65.2 | 65.5 |
| 58.0 | 61.7 | 62.0 | 62.4 | 62.8 | 63.1 | 63.5 | 63.8 | 64.2 | 64.6 | 64.9 | 65.3 | 65.6 | 66.0 |
| 58.5 | 62.1 | 62.5 | 62.8 | 63.2 | 63.6 | 63.9 | 64.3 | 64.7 | 65.0 | 65.4 | 65.8 | 66.1 | 66.5 |
| 59.0 | 62.6 | 62.9 | 63.3 | 63.7 | 64.0 | 64.4 | 64.8 | 65.1 | 65.5 | 65.9 | 66.2 | 66.6 | 67.0 |
| 59.5 | 63.0 | 63.4 | 63.8 | 64.1 | 64.5 | 64.9 | 65.2 | 65.6 | 66.0 | 66.3 | 66.7 | 67.1 | 67.5 |
| 60.0 | 63.5 | 63.8 | 64.2 | 64.6 | 65.0 | 65.3 | 65.7 | 66.1 | 66.4 | 66.8 | 67.2 | 67.6 | 67.9 |
| 60.5 | 63.9 | 64.3 | 64.7 | 65.0 | 65.4 | 65.8 | 66.2 | 66.5 | 66.9 | 67.3 | 67.7 | 68.0 | 68.4 |
| 61.0 | 64.4 | 64.7 | 65.1 | 65.5 | 65.9 | 66.2 | 66.6 | 67.0 | 67.4 | 67.8 | 68.1 | 68.5 | 68.9 |
| 61.5 | 64.8 | 65.2 | 65.6 | 65.9 | 66.3 | 66.7 | 67.1 | 67.5 | 67.8 | 68.2 | 68.6 | 69.0 | 69.4 |
| 62.0 | 65.3 | 65.6 | 66.0 | 66.4 | 66.8 | 67.2 | 67.5 | 67.9 | 68.3 | 68.7 | 69.1 | 69.5 | 69.8 |
| 62.5 | 65.7 | 66.1 | 66.5 | 66.9 | 67.2 | 67.6 | 68.0 | 68.4 | 68.8 | 69.2 | 69.6 | 69.9 | / |
| 63.0 | 66.2 | 66.5 | 66.9 | 67.3 | 67.7 | 68.1 | 68.5 | 68.9 | 69.2 | 69.6 | / | / | / |
| 63.5 | 66.6 | 67.0 | 67.4 | 67.8 | 68.1 | 68.5 | 68.9 | 69.3 | 69.7 | / | / | / | / |
| 64.0 | 67.0 | 67.4 | 67.8 | 68.2 | 68.6 | 69.0 | 69.4 | 69.8 | / | / | / | / | / |
| 64.5 | 67.5 | 67.9 | 68.3 | 68.7 | 69.1 | 69.5 | 69.8 | / | / | / | / | / | / |
| 65.0 | 67.9 | 68.3 | 68.7 | 69.1 | 69.5 | 69.9 | / | / | / | / | / | / | / |
| 65.5 | 68.4 | 68.8 | 69.2 | 69.6 | 70.0 | / | / | / | / | / | / | / | / |
| 66.0 | 68.8 | 69.2 | 69.6 | / | / | / | / | / | / | / | / | / | / |
| 66.5 | 69.3 | 69.7 | / | / | / | / | / | / | / | / | / | / | / |
| 67.0 | 69.7 | / | / | / | / | / | / | / | / | / | / | / | / |
| 67.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 68.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 68.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 69.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 69.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 70.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |

| 续表B | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值*f c cu* (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值*v*（km/s） | | | | | | | | | | | | |
| 5.00 | 5.02 | 5.04 | 5.06 | 5.08 | 5.10 | 5.12 | 5.14 | 5.16 | 5.18 | 5.20 | 5.22 | 5.24 |
| 28.0 | 35.8 | 36.0 | 36.2 | 36.4 | 36.6 | 36.8 | 37.0 | 37.2 | 37.4 | 37.6 | 37.8 | 38.0 | 38.2 |
| 28.5 | 36.3 | 36.5 | 36.7 | 36.9 | 37.1 | 37.3 | 37.5 | 37.7 | 37.9 | 38.2 | 38.4 | 38.6 | 38.8 |
| 29.0 | 36.9 | 37.1 | 37.3 | 37.5 | 37.7 | 37.9 | 38.1 | 38.3 | 38.5 | 38.7 | 38.9 | 39.1 | 39.3 |
| 29.5 | 37.4 | 37.6 | 37.8 | 38.0 | 38.2 | 38.5 | 38.7 | 38.9 | 39.1 | 39.3 | 39.5 | 39.7 | 39.9 |
| 30.0 | 38.0 | 38.2 | 38.4 | 38.6 | 38.8 | 39.0 | 39.2 | 39.4 | 39.6 | 39.8 | 40.1 | 40.3 | 40.5 |
| 30.5 | 38.5 | 38.7 | 38.9 | 39.1 | 39.3 | 39.6 | 39.8 | 40.0 | 40.2 | 40.4 | 40.6 | 40.8 | 41.1 |
| 31.0 | 39.0 | 39.2 | 39.5 | 39.7 | 39.9 | 40.1 | 40.3 | 40.5 | 40.8 | 41.0 | 41.2 | 41.4 | 41.6 |
| 31.5 | 39.6 | 39.8 | 40.0 | 40.2 | 40.4 | 40.7 | 40.9 | 41.1 | 41.3 | 41.5 | 41.8 | 42.0 | 42.2 |
| 32.0 | 40.1 | 40.3 | 40.5 | 40.8 | 41.0 | 41.2 | 41.4 | 41.6 | 41.9 | 42.1 | 42.3 | 42.5 | 42.8 |
| 32.5 | 40.6 | 40.8 | 41.1 | 41.3 | 41.5 | 41.7 | 42.0 | 42.2 | 42.4 | 42.6 | 42.9 | 43.1 | 43.3 |
| 33.0 | 41.1 | 41.4 | 41.6 | 41.8 | 42.1 | 42.3 | 42.5 | 42.7 | 43.0 | 43.2 | 43.4 | 43.7 | 43.9 |
| 33.5 | 41.7 | 41.9 | 42.1 | 42.4 | 42.6 | 42.8 | 43.1 | 43.3 | 43.5 | 43.8 | 44.0 | 44.2 | 44.5 |
| 34.0 | 42.2 | 42.4 | 42.7 | 42.9 | 43.1 | 43.4 | 43.6 | 43.8 | 44.1 | 44.3 | 44.5 | 44.8 | 45.0 |
| 34.5 | 42.7 | 43.0 | 43.2 | 43.4 | 43.7 | 43.9 | 44.1 | 44.4 | 44.6 | 44.9 | 45.1 | 45.3 | 45.6 |
| 35.0 | 43.3 | 43.5 | 43.7 | 44.0 | 44.2 | 44.4 | 44.7 | 44.9 | 45.2 | 45.4 | 45.7 | 45.9 | 46.1 |
| 35.5 | 43.8 | 44.0 | 44.3 | 44.5 | 44.7 | 45.0 | 45.2 | 45.5 | 45.7 | 46.0 | 46.2 | 46.4 | 46.7 |
| 36.0 | 44.3 | 44.5 | 44.8 | 45.0 | 45.3 | 45.5 | 45.8 | 46.0 | 46.3 | 46.5 | 46.8 | 47.0 | 47.3 |
| 36.5 | 44.8 | 45.1 | 45.3 | 45.6 | 45.8 | 46.1 | 46.3 | 46.6 | 46.8 | 47.1 | 47.3 | 47.6 | 47.8 |
| 37.0 | 45.3 | 45.6 | 45.8 | 46.1 | 46.3 | 46.6 | 46.8 | 47.1 | 47.3 | 47.6 | 47.9 | 48.1 | 48.4 |
| 37.5 | 45.9 | 46.1 | 46.4 | 46.6 | 46.9 | 47.1 | 47.4 | 47.6 | 47.9 | 48.1 | 48.4 | 48.7 | 48.9 |
| 38.0 | 46.4 | 46.6 | 46.9 | 47.1 | 47.4 | 47.7 | 47.9 | 48.2 | 48.4 | 48.7 | 48.9 | 49.2 | 49.5 |
| 38.5 | 46.9 | 47.2 | 47.4 | 47.7 | 47.9 | 48.2 | 48.4 | 48.7 | 49.0 | 49.2 | 49.5 | 49.8 | 50.0 |
| 39.0 | 47.4 | 47.7 | 47.9 | 48.2 | 48.5 | 48.7 | 49.0 | 49.2 | 49.5 | 49.8 | 50.0 | 50.3 | 50.6 |
| 39.5 | 47.9 | 48.2 | 48.5 | 48.7 | 49.0 | 49.2 | 49.5 | 49.8 | 50.0 | 50.3 | 50.6 | 50.8 | 51.1 |
| 40.0 | 48.4 | 48.7 | 49.0 | 49.2 | 49.5 | 49.8 | 50.0 | 50.3 | 50.6 | 50.9 | 51.1 | 51.4 | 51.7 |
| 40.5 | 49.0 | 49.2 | 49.5 | 49.8 | 50.0 | 50.3 | 50.6 | 50.8 | 51.1 | 51.4 | 51.7 | 51.9 | 52.2 |
| 41.0 | 49.5 | 49.7 | 50.0 | 50.3 | 50.6 | 50.8 | 51.1 | 51.4 | 51.7 | 51.9 | 52.2 | 52.5 | 52.8 |
| 41.5 | 50.0 | 50.2 | 50.5 | 50.8 | 51.1 | 51.4 | 51.6 | 51.9 | 52.2 | 52.5 | 52.7 | 53.0 | 53.3 |
| 42.0 | 50.5 | 50.8 | 51.0 | 51.3 | 51.6 | 51.9 | 52.2 | 52.4 | 52.7 | 53.0 | 53.3 | 53.6 | 53.8 |
| 42.5 | 51.0 | 51.3 | 51.6 | 51.8 | 52.1 | 52.4 | 52.7 | 53.0 | 53.3 | 53.5 | 53.8 | 54.1 | 54.4 |
| 43.0 | 51.5 | 51.8 | 52.1 | 52.4 | 52.6 | 52.9 | 53.2 | 53.5 | 53.8 | 54.1 | 54.4 | 54.6 | 54.9 |
| 43.5 | 52.0 | 52.3 | 52.6 | 52.9 | 53.2 | 53.4 | 53.7 | 54.0 | 54.3 | 54.6 | 54.9 | 55.2 | 55.5 |
| 44.0 | 52.5 | 52.8 | 53.1 | 53.4 | 53.7 | 54.0 | 54.3 | 54.5 | 54.8 | 55.1 | 55.4 | 55.7 | 56.0 |
| 44.5 | 53.0 | 53.3 | 53.6 | 53.9 | 54.2 | 54.5 | 54.8 | 55.1 | 55.4 | 55.7 | 56.0 | 56.3 | 56.6 |
| 45.0 | 53.5 | 53.8 | 54.1 | 54.4 | 54.7 | 55.0 | 55.3 | 55.6 | 55.9 | 56.2 | 56.5 | 56.8 | 57.1 |
| 45.5 | 54.0 | 54.3 | 54.6 | 54.9 | 55.2 | 55.5 | 55.8 | 56.1 | 56.4 | 56.7 | 57.0 | 57.3 | 57.6 |
| 46.0 | 54.5 | 54.8 | 55.1 | 55.4 | 55.7 | 56.0 | 56.3 | 56.6 | 56.9 | 57.3 | 57.6 | 57.9 | 58.2 |
| 46.5 | 55.0 | 55.3 | 55.6 | 55.9 | 56.2 | 56.6 | 56.9 | 57.2 | 57.5 | 57.8 | 58.1 | 58.4 | 58.7 |
| 47.0 | 55.5 | 55.8 | 56.1 | 56.5 | 56.8 | 57.1 | 57.4 | 57.7 | 58.0 | 58.3 | 58.6 | 58.9 | 59.2 |
| 47.5 | 56.0 | 56.3 | 56.7 | 57.0 | 57.3 | 57.6 | 57.9 | 58.2 | 58.5 | 58.8 | 59.1 | 59.5 | 59.8 |
| 48.0 | 56.5 | 56.8 | 57.2 | 57.5 | 57.8 | 58.1 | 58.4 | 58.7 | 59.0 | 59.4 | 59.7 | 60.0 | 60.3 |
| 48.5 | 57.0 | 57.3 | 57.7 | 58.0 | 58.3 | 58.6 | 58.9 | 59.2 | 59.6 | 59.9 | 60.2 | 60.5 | 60.8 |
| 49.0 | 57.5 | 57.8 | 58.2 | 58.5 | 58.8 | 59.1 | 59.4 | 59.8 | 60.1 | 60.4 | 60.7 | 61.0 | 61.4 |
| 49.5 | 58.0 | 58.3 | 58.7 | 59.0 | 59.3 | 59.6 | 60.0 | 60.3 | 60.6 | 60.9 | 61.2 | 61.6 | 61.9 |
| 50.0 | 58.5 | 58.8 | 59.2 | 59.5 | 59.8 | 60.1 | 60.5 | 60.8 | 61.1 | 61.4 | 61.8 | 62.1 | 62.4 |
| 50.5 | 59.0 | 59.3 | 59.7 | 60.0 | 60.3 | 60.7 | 61.0 | 61.3 | 61.6 | 62.0 | 62.3 | 62.6 | 63.0 |
| 51.0 | 59.5 | 59.8 | 60.2 | 60.5 | 60.8 | 61.2 | 61.5 | 61.8 | 62.2 | 62.5 | 62.8 | 63.1 | 63.5 |
| 51.5 | 60.0 | 60.3 | 60.7 | 61.0 | 61.3 | 61.7 | 62.0 | 62.3 | 62.7 | 63.0 | 63.3 | 63.7 | 64.0 |
| 52.0 | 60.5 | 60.8 | 61.2 | 61.5 | 61.8 | 62.2 | 62.5 | 62.8 | 63.2 | 63.5 | 63.9 | 64.2 | 64.5 |
| 52.5 | 61.0 | 61.3 | 61.7 | 62.0 | 62.3 | 62.7 | 63.0 | 63.4 | 63.7 | 64.0 | 64.4 | 64.7 | 65.1 |
| 53.0 | 61.5 | 61.8 | 62.2 | 62.5 | 62.8 | 63.2 | 63.5 | 63.9 | 64.2 | 64.6 | 64.9 | 65.2 | 65.6 |
| 53.5 | 62.0 | 62.3 | 62.7 | 63.0 | 63.4 | 63.7 | 64.0 | 64.4 | 64.7 | 65.1 | 65.4 | 65.8 | 66.1 |
| 54.0 | 62.5 | 62.8 | 63.2 | 63.5 | 63.9 | 64.2 | 64.5 | 64.9 | 65.2 | 65.6 | 65.9 | 66.3 | 66.6 |
| 54.5 | 63.0 | 63.3 | 63.7 | 64.0 | 64.4 | 64.7 | 65.1 | 65.4 | 65.8 | 66.1 | 66.5 | 66.8 | 67.2 |
| 55.0 | 63.5 | 63.8 | 64.2 | 64.5 | 64.9 | 65.2 | 65.6 | 65.9 | 66.3 | 66.6 | 67.0 | 67.3 | 67.7 |
| 55.5 | 63.9 | 64.3 | 64.6 | 65.0 | 65.4 | 65.7 | 66.1 | 66.4 | 66.8 | 67.1 | 67.5 | 67.8 | 68.2 |
| 56.0 | 64.4 | 64.8 | 65.1 | 65.5 | 65.9 | 66.2 | 66.6 | 66.9 | 67.3 | 67.6 | 68.0 | 68.4 | 68.7 |
| 56.5 | 64.9 | 65.3 | 65.6 | 66.0 | 66.3 | 66.7 | 67.1 | 67.4 | 67.8 | 68.2 | 68.5 | 68.9 | 69.2 |
| 57.0 | 65.4 | 65.8 | 66.1 | 66.5 | 66.8 | 67.2 | 67.6 | 67.9 | 68.3 | 68.7 | 69.0 | 69.4 | 69.8 |
| 57.5 | 65.9 | 66.3 | 66.6 | 67.0 | 67.3 | 67.7 | 68.1 | 68.4 | 68.8 | 69.2 | 69.5 | 69.9 | / |
| 58.0 | 66.4 | 66.7 | 67.1 | 67.5 | 67.8 | 68.2 | 68.6 | 68.9 | 69.3 | 69.7 | / | / | / |
| 58.5 | 66.9 | 67.2 | 67.6 | 68.0 | 68.3 | 68.7 | 69.1 | 69.4 | 69.8 | / | / | / | / |
| 59.0 | 67.3 | 67.7 | 68.1 | 68.5 | 68.8 | 69.2 | 69.6 | 70.0 | / | / | / | / | / |
| 59.5 | 67.8 | 68.2 | 68.6 | 68.9 | 69.3 | 69.7 | / | / | / | / | / | / | / |
| 60.0 | 68.3 | 68.7 | 69.1 | 69.4 | 69.8 | / | / | / | / | / | / | / | / |
| 60.5 | 68.8 | 69.2 | 69.6 | 69.9 | / | / | / | / | / | / | / | / | / |
| 61.0 | 69.3 | 69.7 | / | / | / | / | / | / | / | / | / | / | / |
| 61.5 | 69.8 | / | / | / | / | / | / | / | / | / | / | / | / |
| 62.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 62.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 63.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 63.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 64.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 64.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 65.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 65.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 66.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 66.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 67.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 67.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 68.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 68.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 69.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 69.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 70.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |

| 续表B | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值*f c cu* (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值*v*（km/s） | | | | | | | | | | | | |
| 5.26 | 5.28 | 5.30 | 5.32 | 5.34 | 5.36 | 5.38 | 5.40 | 5.42 | 5.44 | 5.46 | 5.48 | 5.50 |
| 28.0 | 38.4 | 38.6 | 38.8 | 39.0 | 39.2 | 39.4 | 39.6 | 39.8 | 40.0 | 40.2 | 40.4 | 40.6 | 40.8 |
| 28.5 | 39.0 | 39.2 | 39.4 | 39.6 | 39.8 | 40.0 | 40.2 | 40.4 | 40.6 | 40.8 | 41.0 | 41.2 | 41.4 |
| 29.0 | 39.5 | 39.7 | 40.0 | 40.2 | 40.4 | 40.6 | 40.8 | 41.0 | 41.2 | 41.4 | 41.6 | 41.8 | 42.0 |
| 29.5 | 40.1 | 40.3 | 40.5 | 40.8 | 41.0 | 41.2 | 41.4 | 41.6 | 41.8 | 42.0 | 42.2 | 42.4 | 42.7 |
| 30.0 | 40.7 | 40.9 | 41.1 | 41.3 | 41.5 | 41.8 | 42.0 | 42.2 | 42.4 | 42.6 | 42.8 | 43.1 | 43.3 |
| 30.5 | 41.3 | 41.5 | 41.7 | 41.9 | 42.1 | 42.4 | 42.6 | 42.8 | 43.0 | 43.2 | 43.4 | 43.7 | 43.9 |
| 31.0 | 41.8 | 42.1 | 42.3 | 42.5 | 42.7 | 42.9 | 43.2 | 43.4 | 43.6 | 43.8 | 44.0 | 44.3 | 44.5 |
| 31.5 | 42.4 | 42.6 | 42.9 | 43.1 | 43.3 | 43.5 | 43.8 | 44.0 | 44.2 | 44.4 | 44.6 | 44.9 | 45.1 |
| 32.0 | 43.0 | 43.2 | 43.4 | 43.7 | 43.9 | 44.1 | 44.3 | 44.6 | 44.8 | 45.0 | 45.2 | 45.5 | 45.7 |
| 32.5 | 43.6 | 43.8 | 44.0 | 44.2 | 44.5 | 44.7 | 44.9 | 45.2 | 45.4 | 45.6 | 45.8 | 46.1 | 46.3 |
| 33.0 | 44.1 | 44.4 | 44.6 | 44.8 | 45.0 | 45.3 | 45.5 | 45.7 | 46.0 | 46.2 | 46.4 | 46.7 | 46.9 |
| 33.5 | 44.7 | 44.9 | 45.2 | 45.4 | 45.6 | 45.9 | 46.1 | 46.3 | 46.6 | 46.8 | 47.0 | 47.3 | 47.5 |
| 34.0 | 45.3 | 45.5 | 45.7 | 46.0 | 46.2 | 46.4 | 46.7 | 46.9 | 47.2 | 47.4 | 47.6 | 47.9 | 48.1 |
| 34.5 | 45.8 | 46.1 | 46.3 | 46.5 | 46.8 | 47.0 | 47.3 | 47.5 | 47.7 | 48.0 | 48.2 | 48.5 | 48.7 |
| 35.0 | 46.4 | 46.6 | 46.9 | 47.1 | 47.4 | 47.6 | 47.8 | 48.1 | 48.3 | 48.6 | 48.8 | 49.1 | 49.3 |
| 35.5 | 46.9 | 47.2 | 47.4 | 47.7 | 47.9 | 48.2 | 48.4 | 48.7 | 48.9 | 49.2 | 49.4 | 49.7 | 49.9 |
| 36.0 | 47.5 | 47.7 | 48.0 | 48.2 | 48.5 | 48.7 | 49.0 | 49.2 | 49.5 | 49.7 | 50.0 | 50.3 | 50.5 |
| 36.5 | 48.1 | 48.3 | 48.6 | 48.8 | 49.1 | 49.3 | 49.6 | 49.8 | 50.1 | 50.3 | 50.6 | 50.8 | 51.1 |
| 37.0 | 48.6 | 48.9 | 49.1 | 49.4 | 49.6 | 49.9 | 50.1 | 50.4 | 50.7 | 50.9 | 51.2 | 51.4 | 51.7 |
| 37.5 | 49.2 | 49.4 | 49.7 | 49.9 | 50.2 | 50.5 | 50.7 | 51.0 | 51.2 | 51.5 | 51.8 | 52.0 | 52.3 |
| 38.0 | 49.7 | 50.0 | 50.2 | 50.5 | 50.8 | 51.0 | 51.3 | 51.6 | 51.8 | 52.1 | 52.3 | 52.6 | 52.9 |
| 38.5 | 50.3 | 50.5 | 50.8 | 51.1 | 51.3 | 51.6 | 51.9 | 52.1 | 52.4 | 52.7 | 52.9 | 53.2 | 53.5 |
| 39.0 | 50.8 | 51.1 | 51.4 | 51.6 | 51.9 | 52.2 | 52.4 | 52.7 | 53.0 | 53.2 | 53.5 | 53.8 | 54.1 |
| 39.5 | 51.4 | 51.7 | 51.9 | 52.2 | 52.5 | 52.7 | 53.0 | 53.3 | 53.5 | 53.8 | 54.1 | 54.4 | 54.6 |
| 40.0 | 51.9 | 52.2 | 52.5 | 52.8 | 53.0 | 53.3 | 53.6 | 53.8 | 54.1 | 54.4 | 54.7 | 54.9 | 55.2 |
| 40.5 | 52.5 | 52.8 | 53.0 | 53.3 | 53.6 | 53.9 | 54.1 | 54.4 | 54.7 | 55.0 | 55.3 | 55.5 | 55.8 |
| 41.0 | 53.0 | 53.3 | 53.6 | 53.9 | 54.1 | 54.4 | 54.7 | 55.0 | 55.3 | 55.5 | 55.8 | 56.1 | 56.4 |
| 41.5 | 53.6 | 53.9 | 54.1 | 54.4 | 54.7 | 55.0 | 55.3 | 55.6 | 55.8 | 56.1 | 56.4 | 56.7 | 57.0 |
| 42.0 | 54.1 | 54.4 | 54.7 | 55.0 | 55.3 | 55.6 | 55.8 | 56.1 | 56.4 | 56.7 | 57.0 | 57.3 | 57.6 |
| 42.5 | 54.7 | 55.0 | 55.2 | 55.5 | 55.8 | 56.1 | 56.4 | 56.7 | 57.0 | 57.3 | 57.6 | 57.8 | 58.1 |
| 43.0 | 55.2 | 55.5 | 55.8 | 56.1 | 56.4 | 56.7 | 57.0 | 57.3 | 57.5 | 57.8 | 58.1 | 58.4 | 58.7 |
| 43.5 | 55.8 | 56.1 | 56.3 | 56.6 | 56.9 | 57.2 | 57.5 | 57.8 | 58.1 | 58.4 | 58.7 | 59.0 | 59.3 |
| 44.0 | 56.3 | 56.6 | 56.9 | 57.2 | 57.5 | 57.8 | 58.1 | 58.4 | 58.7 | 59.0 | 59.3 | 59.6 | 59.9 |
| 44.5 | 56.8 | 57.1 | 57.4 | 57.7 | 58.0 | 58.3 | 58.6 | 58.9 | 59.2 | 59.5 | 59.8 | 60.1 | 60.4 |
| 45.0 | 57.4 | 57.7 | 58.0 | 58.3 | 58.6 | 58.9 | 59.2 | 59.5 | 59.8 | 60.1 | 60.4 | 60.7 | 61.0 |
| 45.5 | 57.9 | 58.2 | 58.5 | 58.8 | 59.1 | 59.5 | 59.8 | 60.1 | 60.4 | 60.7 | 61.0 | 61.3 | 61.6 |
| 46.0 | 58.5 | 58.8 | 59.1 | 59.4 | 59.7 | 60.0 | 60.3 | 60.6 | 60.9 | 61.2 | 61.5 | 61.9 | 62.2 |
| 46.5 | 59.0 | 59.3 | 59.6 | 59.9 | 60.2 | 60.6 | 60.9 | 61.2 | 61.5 | 61.8 | 62.1 | 62.4 | 62.7 |
| 47.0 | 59.5 | 59.9 | 60.2 | 60.5 | 60.8 | 61.1 | 61.4 | 61.7 | 62.1 | 62.4 | 62.7 | 63.0 | 63.3 |
| 47.5 | 60.1 | 60.4 | 60.7 | 61.0 | 61.3 | 61.7 | 62.0 | 62.3 | 62.6 | 62.9 | 63.2 | 63.6 | 63.9 |
| 48.0 | 60.6 | 60.9 | 61.3 | 61.6 | 61.9 | 62.2 | 62.5 | 62.8 | 63.2 | 63.5 | 63.8 | 64.1 | 64.5 |
| 48.5 | 61.2 | 61.5 | 61.8 | 62.1 | 62.4 | 62.8 | 63.1 | 63.4 | 63.7 | 64.0 | 64.4 | 64.7 | 65.0 |
| 49.0 | 61.7 | 62.0 | 62.3 | 62.7 | 63.0 | 63.3 | 63.6 | 64.0 | 64.3 | 64.6 | 64.9 | 65.3 | 65.6 |
| 49.5 | 62.2 | 62.5 | 62.9 | 63.2 | 63.5 | 63.9 | 64.2 | 64.5 | 64.8 | 65.2 | 65.5 | 65.8 | 66.2 |
| 50.0 | 62.8 | 63.1 | 63.4 | 63.7 | 64.1 | 64.4 | 64.7 | 65.1 | 65.4 | 65.7 | 66.1 | 66.4 | 66.7 |
| 50.5 | 63.3 | 63.6 | 63.9 | 64.3 | 64.6 | 64.9 | 65.3 | 65.6 | 65.9 | 66.3 | 66.6 | 67.0 | 67.3 |
| 51.0 | 63.8 | 64.1 | 64.5 | 64.8 | 65.2 | 65.5 | 65.8 | 66.2 | 66.5 | 66.8 | 67.2 | 67.5 | 67.9 |
| 51.5 | 64.3 | 64.7 | 65.0 | 65.4 | 65.7 | 66.0 | 66.4 | 66.7 | 67.1 | 67.4 | 67.7 | 68.1 | 68.4 |
| 52.0 | 64.9 | 65.2 | 65.6 | 65.9 | 66.2 | 66.6 | 66.9 | 67.3 | 67.6 | 67.9 | 68.3 | 68.6 | 69.0 |
| 52.5 | 65.4 | 65.7 | 66.1 | 66.4 | 66.8 | 67.1 | 67.5 | 67.8 | 68.2 | 68.5 | 68.8 | 69.2 | 69.5 |
| 53.0 | 65.9 | 66.3 | 66.6 | 67.0 | 67.3 | 67.7 | 68.0 | 68.4 | 68.7 | 69.1 | 69.4 | 69.8 | / |
| 53.5 | 66.5 | 66.8 | 67.2 | 67.5 | 67.9 | 68.2 | 68.6 | 68.9 | 69.3 | 69.6 | 70.0 | / | / |
| 54.0 | 67.0 | 67.3 | 67.7 | 68.0 | 68.4 | 68.7 | 69.1 | 69.4 | 69.8 | / | / | / | / |
| 54.5 | 67.5 | 67.9 | 68.2 | 68.6 | 68.9 | 69.3 | 69.6 | 70.0 | / | / | / | / | / |
| 55.0 | 68.0 | 68.4 | 68.7 | 69.1 | 69.5 | 69.8 | / | / | / | / | / | / | / |
| 55.5 | 68.6 | 68.9 | 69.3 | 69.6 | 70.0 | / | / | / | / | / | / | / | / |
| 56.0 | 69.1 | 69.4 | 69.8 | / | / | / | / | / | / | / | / | / | / |
| 56.5 | 69.6 | 70.0 | / | / | / | / | / | / | / | / | / | / | / |
| 57.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 57.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 58.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 58.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 59.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 59.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 60.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |

| 续表B | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测区 回弹 代表值 R | 测区混凝土强度换算值*f c cu* (MPa) | | | | | | | | | | | | |
| 测区混凝土中声速代表值*v*（km/s） | | | | | | | | | | | | |
| 5.52 | 5.54 | 5.56 | 5.58 | 5.60 | 5.62 | 5.64 | 5.66 | 5.68 | 5.70 | 5.72 | 5.74 | 5.76 |
| 28.0 | 41.0 | 41.2 | 41.4 | 41.6 | 41.8 | 42.0 | 42.2 | 42.5 | 42.7 | 42.9 | 43.1 | 43.3 | 43.5 |
| 28.5 | 41.6 | 41.8 | 42.1 | 42.3 | 42.5 | 42.7 | 42.9 | 43.1 | 43.3 | 43.5 | 43.7 | 43.9 | 44.1 |
| 29.0 | 42.3 | 42.5 | 42.7 | 42.9 | 43.1 | 43.3 | 43.5 | 43.7 | 43.9 | 44.2 | 44.4 | 44.6 | 44.8 |
| 29.5 | 42.9 | 43.1 | 43.3 | 43.5 | 43.7 | 43.9 | 44.2 | 44.4 | 44.6 | 44.8 | 45.0 | 45.2 | 45.5 |
| 30.0 | 43.5 | 43.7 | 43.9 | 44.1 | 44.4 | 44.6 | 44.8 | 45.0 | 45.2 | 45.4 | 45.7 | 45.9 | 46.1 |
| 30.5 | 44.1 | 44.3 | 44.5 | 44.8 | 45.0 | 45.2 | 45.4 | 45.6 | 45.9 | 46.1 | 46.3 | 46.5 | 46.8 |
| 31.0 | 44.7 | 44.9 | 45.2 | 45.4 | 45.6 | 45.8 | 46.1 | 46.3 | 46.5 | 46.7 | 47.0 | 47.2 | 47.4 |
| 31.5 | 45.3 | 45.6 | 45.8 | 46.0 | 46.2 | 46.5 | 46.7 | 46.9 | 47.1 | 47.4 | 47.6 | 47.8 | 48.1 |
| 32.0 | 45.9 | 46.2 | 46.4 | 46.6 | 46.9 | 47.1 | 47.3 | 47.5 | 47.8 | 48.0 | 48.2 | 48.5 | 48.7 |
| 32.5 | 46.5 | 46.8 | 47.0 | 47.2 | 47.5 | 47.7 | 47.9 | 48.2 | 48.4 | 48.6 | 48.9 | 49.1 | 49.3 |
| 33.0 | 47.1 | 47.4 | 47.6 | 47.9 | 48.1 | 48.3 | 48.6 | 48.8 | 49.0 | 49.3 | 49.5 | 49.8 | 50.0 |
| 33.5 | 47.8 | 48.0 | 48.2 | 48.5 | 48.7 | 48.9 | 49.2 | 49.4 | 49.7 | 49.9 | 50.1 | 50.4 | 50.6 |
| 34.0 | 48.4 | 48.6 | 48.8 | 49.1 | 49.3 | 49.6 | 49.8 | 50.1 | 50.3 | 50.5 | 50.8 | 51.0 | 51.3 |
| 34.5 | 49.0 | 49.2 | 49.4 | 49.7 | 49.9 | 50.2 | 50.4 | 50.7 | 50.9 | 51.2 | 51.4 | 51.7 | 51.9 |
| 35.0 | 49.6 | 49.8 | 50.1 | 50.3 | 50.5 | 50.8 | 51.0 | 51.3 | 51.5 | 51.8 | 52.0 | 52.3 | 52.5 |
| 35.5 | 50.2 | 50.4 | 50.7 | 50.9 | 51.2 | 51.4 | 51.7 | 51.9 | 52.2 | 52.4 | 52.7 | 52.9 | 53.2 |
| 36.0 | 50.8 | 51.0 | 51.3 | 51.5 | 51.8 | 52.0 | 52.3 | 52.5 | 52.8 | 53.0 | 53.3 | 53.6 | 53.8 |
| 36.5 | 51.4 | 51.6 | 51.9 | 52.1 | 52.4 | 52.6 | 52.9 | 53.2 | 53.4 | 53.7 | 53.9 | 54.2 | 54.4 |
| 37.0 | 51.9 | 52.2 | 52.5 | 52.7 | 53.0 | 53.2 | 53.5 | 53.8 | 54.0 | 54.3 | 54.6 | 54.8 | 55.1 |
| 37.5 | 52.5 | 52.8 | 53.1 | 53.3 | 53.6 | 53.9 | 54.1 | 54.4 | 54.7 | 54.9 | 55.2 | 55.4 | 55.7 |
| 38.0 | 53.1 | 53.4 | 53.7 | 53.9 | 54.2 | 54.5 | 54.7 | 55.0 | 55.3 | 55.5 | 55.8 | 56.1 | 56.3 |
| 38.5 | 53.7 | 54.0 | 54.3 | 54.5 | 54.8 | 55.1 | 55.3 | 55.6 | 55.9 | 56.2 | 56.4 | 56.7 | 57.0 |
| 39.0 | 54.3 | 54.6 | 54.9 | 55.1 | 55.4 | 55.7 | 56.0 | 56.2 | 56.5 | 56.8 | 57.0 | 57.3 | 57.6 |
| 39.5 | 54.9 | 55.2 | 55.5 | 55.7 | 56.0 | 56.3 | 56.6 | 56.8 | 57.1 | 57.4 | 57.7 | 57.9 | 58.2 |
| 40.0 | 55.5 | 55.8 | 56.1 | 56.3 | 56.6 | 56.9 | 57.2 | 57.4 | 57.7 | 58.0 | 58.3 | 58.6 | 58.8 |
| 40.5 | 56.1 | 56.4 | 56.6 | 56.9 | 57.2 | 57.5 | 57.8 | 58.1 | 58.3 | 58.6 | 58.9 | 59.2 | 59.5 |
| 41.0 | 56.7 | 57.0 | 57.2 | 57.5 | 57.8 | 58.1 | 58.4 | 58.7 | 58.9 | 59.2 | 59.5 | 59.8 | 60.1 |
| 41.5 | 57.3 | 57.5 | 57.8 | 58.1 | 58.4 | 58.7 | 59.0 | 59.3 | 59.6 | 59.8 | 60.1 | 60.4 | 60.7 |
| 42.0 | 57.8 | 58.1 | 58.4 | 58.7 | 59.0 | 59.3 | 59.6 | 59.9 | 60.2 | 60.5 | 60.7 | 61.0 | 61.3 |
| 42.5 | 58.4 | 58.7 | 59.0 | 59.3 | 59.6 | 59.9 | 60.2 | 60.5 | 60.8 | 61.1 | 61.4 | 61.7 | 61.9 |
| 43.0 | 59.0 | 59.3 | 59.6 | 59.9 | 60.2 | 60.5 | 60.8 | 61.1 | 61.4 | 61.7 | 62.0 | 62.3 | 62.6 |
| 43.5 | 59.6 | 59.9 | 60.2 | 60.5 | 60.8 | 61.1 | 61.4 | 61.7 | 62.0 | 62.3 | 62.6 | 62.9 | 63.2 |
| 44.0 | 60.2 | 60.5 | 60.8 | 61.1 | 61.4 | 61.7 | 62.0 | 62.3 | 62.6 | 62.9 | 63.2 | 63.5 | 63.8 |
| 44.5 | 60.7 | 61.1 | 61.4 | 61.7 | 62.0 | 62.3 | 62.6 | 62.9 | 63.2 | 63.5 | 63.8 | 64.1 | 64.4 |
| 45.0 | 61.3 | 61.6 | 61.9 | 62.2 | 62.6 | 62.9 | 63.2 | 63.5 | 63.8 | 64.1 | 64.4 | 64.7 | 65.0 |
| 45.5 | 61.9 | 62.2 | 62.5 | 62.8 | 63.1 | 63.5 | 63.8 | 64.1 | 64.4 | 64.7 | 65.0 | 65.3 | 65.6 |
| 46.0 | 62.5 | 62.8 | 63.1 | 63.4 | 63.7 | 64.0 | 64.4 | 64.7 | 65.0 | 65.3 | 65.6 | 65.9 | 66.2 |
| 46.5 | 63.1 | 63.4 | 63.7 | 64.0 | 64.3 | 64.6 | 64.9 | 65.3 | 65.6 | 65.9 | 66.2 | 66.5 | 66.9 |
| 47.0 | 63.6 | 63.9 | 64.3 | 64.6 | 64.9 | 65.2 | 65.5 | 65.9 | 66.2 | 66.5 | 66.8 | 67.1 | 67.5 |
| 47.5 | 64.2 | 64.5 | 64.8 | 65.2 | 65.5 | 65.8 | 66.1 | 66.5 | 66.8 | 67.1 | 67.4 | 67.7 | 68.1 |
| 48.0 | 64.8 | 65.1 | 65.4 | 65.7 | 66.1 | 66.4 | 66.7 | 67.0 | 67.4 | 67.7 | 68.0 | 68.4 | 68.7 |
| 48.5 | 65.3 | 65.7 | 66.0 | 66.3 | 66.7 | 67.0 | 67.3 | 67.6 | 68.0 | 68.3 | 68.6 | 69.0 | 69.3 |
| 49.0 | 65.9 | 66.2 | 66.6 | 66.9 | 67.2 | 67.6 | 67.9 | 68.2 | 68.6 | 68.9 | 69.2 | 69.6 | 69.9 |
| 49.5 | 66.5 | 66.8 | 67.2 | 67.5 | 67.8 | 68.2 | 68.5 | 68.8 | 69.2 | 69.5 | 69.8 | / | / |
| 50.0 | 67.1 | 67.4 | 67.7 | 68.1 | 68.4 | 68.7 | 69.1 | 69.4 | 69.7 | / | / | / | / |
| 50.5 | 67.6 | 68.0 | 68.3 | 68.6 | 69.0 | 69.3 | 69.7 | 70.0 | / | / | / | / | / |
| 51.0 | 68.2 | 68.5 | 68.9 | 69.2 | 69.6 | 69.9 | / | / | / | / | / | / | / |
| 51.5 | 68.8 | 69.1 | 69.4 | 69.8 | / | / | / | / | / | / | / | / | / |
| 52.0 | 69.3 | 69.7 | / | / | / | / | / | / | / | / | / | / | / |
| 52.5 | 69.9 | / | / | / | / | / | / | / | / | / | / | / | / |
| 53.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 53.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 54.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 54.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 55.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 55.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 56.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 56.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 57.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 57.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 58.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 58.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 59.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 59.5 | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 60.0 | / | / | / | / | / | / | / | / | / | / | / | / | / |

注：1、表内v(km/s)为测区声速代表值，R为测区回弹代表值；

2、*f c cu*(MPa)为测区混凝土抗压强度换算值，也可按公式*f c cu=0.2321v1.3753R0.8478*计算；

3、表内未列数值可用内插法求得，精度至0.1MPa。

**附录C 非水平方向检测时的回弹修正值**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R | 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、*R*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R的修正值Raα，可用内插法求得，精度至0.1。

**附录D 测试混凝土浇筑顶面或底面时的回弹修正值**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *R*或*R*a | 顶面修正值 （*R*t a） | 底面修正值 （*Rb a*） | *R*或*R*a | 顶面修正值 （*R*t a） | 底面修正值 （*Rb a*） |
| 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、在侧面测试时，修正值为0；*R*或*Ra*小于20或大于50时，分别按20或50查表；

2、当先进行角度修正时，采用修正后的回弹代表值*Ra*；

3、表中未列数值，可用内插法求得，精度至0.1。

**附录E 用实测空气声速法校准超声仪**

**E.0.1** 空气中声速的测试步骤如下：

取常用平面换能器一对，接于超声波仪器上。开机预热 10min。在空气中将两个换能器的辐射面对准，依次改变两个换能器辐射面之间的距离 *l* （如50mm，60mm，70mm，80mm，90mm，100mm，110mm，120mm，……），在保持首波幅度一致的条件下，读取各间距所对应的声时值 *t*1、 *t*2、 *t*3、…… *t*n。同时测量空气温度 *T*k，精确至0.5℃。

测量时应注意下列事项：

1 两个换能器辐射面的轴线始终保持在同一直线上；

2 换能器辐射面间距的测量误差应不超过±1%，且测量精度为 0.5mm；

3 换能器辐射面宜悬空相对放置；若置于地板或桌面上，必须在换能器下面垫以吸声材料。

**E.0.2** 实测空气中声速可采用下列两种方法之一计算：

1 以换能器辐射面间距为纵坐标，声时读数为横坐标，将各组数据点绘在直角坐标图上。穿越各点形成一直线，算出该直线的斜率，即为空气中声速实测值。

2 以各测点的测距 *l* 和对应的声时 *t* 求回归直线方程l=a+bt。回归系数 *b* 便是空气中声速实测值。

**E.0.3** 空气中声速计算值 *v*k可按式（4.3.1）求得。

**E.0.4** 误差计算

空气中声速计算值 *v*k与空气中声速实测值 *v*o之间的相对误差 *e*r，可按下列公式计算：

（E.0.4）

按式（E.0.4）计算所得的值不应超过±0.5%。否则，应检查仪器各部位的连接后重测，或更换超声波检测仪。

**附录F 超声回弹综合法检测记录表**

工程名称 构件名称

设备：回弹仪 率定值 超声仪 换能器 kHz，*t0* 环境温度 ℃

回弹测试面 测试角度 ° 超声测试方式 对测（侧，顶-底）；平测（侧，顶，底）；角测

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 构件  编号 | 测区 | 测点回弹值*Ri* | | | | | | | | 测区回弹代表值R | 测点测距*li/*声时*ti* | | | 测区声速代表值v（km/s） | 备注 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 |
|  | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 复核： | |  |  | 计算： |  |  | 记录： |  |  | 检验： |  |  | 测试日期： 年 月 日 | | |

**附录G 结构混凝土抗压强度计算表**

构件名称和编号： 共 页 第 页

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 计算项目 | | 测区 | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 回  弹  值 | 测区代表值 |  |  |  |  |  |  |  |  |  |  |
| 角度修正值 |  |  |  |  |  |  |  |  |  |  |
| 角度修正后 |  |  |  |  |  |  |  |  |  |  |
| 浇筑面修正值 |  |  |  |  |  |  |  |  |  |  |
| 浇筑面修正后 |  |  |  |  |  |  |  |  |  |  |
| 声  速  值  （km/s） | 测区代表值 |  |  |  |  |  |  |  |  |  |  |
| 修正系数*β*、*λ* |  |  |  |  |  |  |  |  |  |  |
| 修正后的值 |  |  |  |  |  |  |  |  |  |  |
| 强度修正系数*η* | |  |  |  |  |  |  |  |  |  |  |
| 测区强度换算值（MPa） | |  |  |  |  |  |  |  |  |  |  |
| 强度推定值（MPa）  *n* = | | = MPa | | | = MPa | | | *f*cu,e= MPa | | | |
| 使用的测区强度  换算表 | | 规程，地区，专用 | | | | | 备注 | | | | |
| 复核： |  | 计算： | | | | | 计算日期： 年 月 日 | | | | |

**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”；

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时，写法为：“应按……执行”或“应符合……规定（或要求）”。

条文说明

**制订说明**

《云南省公路工程超声回弹综合法检测混凝土抗压强度技术规程》DBXXX，经XXX 年 月 日以 号文公告批准、发布。

本规程编制过程中，编制组开展了大量的试验研究，获得了云南省公路工程混凝土强度检测的重要数据。

为便于广大工程设计、施工、科研、学校等单位有关人员在使用本规程时能正确理解和执行条文规定，《云南省公路工程超声回弹综合法检测混凝土抗压强度技术规程》编制组按章、节、条顺序编制了本规程的条文说明。对条文规定的目的、依据以及执行中需要注意的有关事项进行了说明。但是，本条文说明不具备与规程正文同等的法律效力，仅供使用者作为理解和把握规程规定的参考。

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1 **总则**

**1.0.1** 依据《超声回弹综合法检测混凝土强度技术规程》（CECS 02：2005）第6.0.2条“优先采用专用测强曲线或地区测强曲线”，制定本规程。

**1.0.2**本条限定本规程的适用区域范围和对混凝土的要求。在正常情况下，应当按现行国家标准《混凝土结构工程施工质量规范》GB 50204及《混凝土强度检验评定标准》GB/T 50107验收评定混凝土强度，不允许用本规程取代国家标准对制作混凝土标准试件的要求。但是，由于管理不善、施工质量不良，试件与结构中混凝土质量不一致或对混凝土标准试件检验结果有怀疑时，可以按本规程进行检测，推定混凝土强度，并作为处理混凝土质量问题的主要依据。

**1.0.3** 由于本规程规定的方法是处理混凝土质量问题的依据，若不进行专业培训，则会对同一结构构件混凝土强度的推定结果存在着因人而异的混乱现象，因此本条规定凡从事本项检测的人员应经过培训并持有相应的资格证书。

**1.0.4** 凡本规程涉及的其它有关方面，例如钻芯取样，高空、深坑作业时的安全技术和劳动保护等，均应遵守相应的标准规范。

2 **术语、符号**

本章内容引用及参考《超声回弹综合法检测混凝土强度技术规程》CECS 02：2005第2章的内容。

3 **回弹仪**

本章内容引用及参考《超声回弹综合法检测混凝土强度技术规程》CECS 02：2005第3章的内容。

4 **混凝土超声波检测仪器**

本章内容引用《超声回弹综合法检测混凝土强度技术规程》CECS 02：2005第4章的内容。

5 **检测技术及计算**

本章内容引用《超声回弹综合法检测混凝土强度技术规程》CECS 02：2005第5章的内容。

6 **结构混凝土强度推定**

**6.0.1** 本规程的强度换算适用于符合本条规定的普通混凝土。当与本条的规定有差异时，可从被测构件上钻取不少于4个*φ*100×100mm的混凝土芯样进行修正。

**6.0.2** 本次建立测强曲线采用的混凝土立方体试件共384组1152块，取自小龙、弥泸、香丽、昭通大山包四条高速公路，涵盖了C30、C35、C40、C45、C50、C55共6个强度等级和7d、14d、28d、60d、90d、180d、360d共7个养护龄期。按照最小二乘法原理，利用EXCEL进行曲线拟合，得到的回归方程如下：

该曲线的相关系数为0.841，相对误差（*e*r）为9.83%，符合《超声回弹综合法检测混凝土强度技术规程》CECS 02：2005规定的相对误差不应大于14%的要求。

该曲线的回弹值区间为27.0~50.9，实测抗压强度值区间为（25.5~74.5）MPa。

**6.0.3、6.0.4、6.0.5、6.0.6** 本部分引用《超声回弹综合法检测混凝土强度技术规程》CECS 02：2005中第6章6.0.5、6.0.6、6.0.7、6.0.8中的内容。