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# POCKET ROT

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# 7

## 7.0 Pocket Rot

Pocket rot appears as broken up patches of heart rot scattered in asymmetrical patterns on the face of logs (see figure 7.1). When assessing the area of the face of a log displaying this type of rot, the scaler must be careful to establish what portion of the discolouration is stain and what portion is rot.

### 7.1 Pocket Rot - Through Running

The essential measurements required to arrive at rot volumes are:

- The defect length in metres to the nearest tenth of a metre (the same as the measured log length),
- If four-sided, the height and width of both defect ends in rads,
- If round or out of round, the diameters at both ends in rads, and
- If triangular, the base and height at both ends in rads.

If multiple, the defects can be amalgamated or grouped together to form one defect.



*Figure 7.1 Pocket rot established in heart wood*



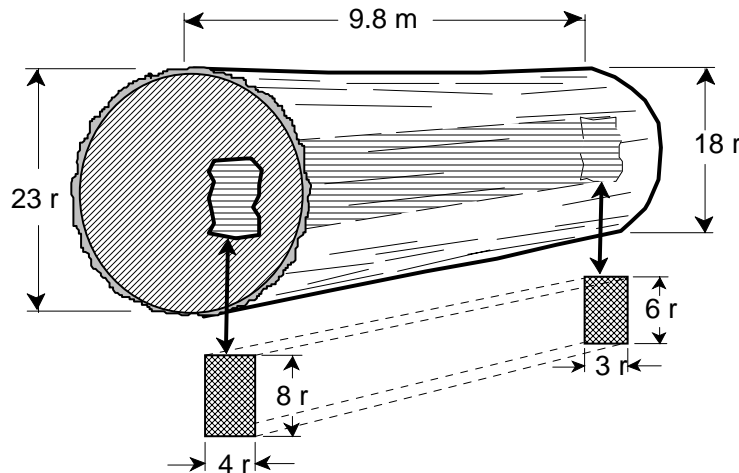
*Figure 7.2 Pocket rot in various stages, and areas on the log face*



*Figure 7.3 Heart rot with scattered areas of pocket rot*

### 7.1.1 Example and Illustration - Pocket Defect, Through-running

This log is infected with a type of rot that forms in pockets rather than following the growth rings. Its shape is closer to being rectangular than circular.



*Figure 7.4 A log with through-running pocket rot.*

### 7.2 Field Calculation - Length Deduction

To reduce the gross length measurement of the log to create a log with net dimensions equal to the net volume in the example, the defect is enclosed in a box representing the area of the defect.

Calculate the unit volumes of the defect ends by multiplying the height by the width by the factor of 0.4 to convert the end area of the defect from "square rads" to unit volumes:

$$\begin{array}{rcl}
 3 \times 6 \times 0.4 & = & 7 \text{ dm}^3 \\
 4 \times 8 \times 0.4 & = & + 13 \text{ dm}^3 \\
 \text{Sum of unit volumes} & = & 20 \text{ dm}^3 \\
 \text{Divided by 2} & = & 10 \text{ dm}^3, \text{ the AUV}
 \end{array}$$

Multiply the average unit volume of the defect by the length of the defect to obtain the defect volume:

$$\text{Unit volume } 10 \text{ dm}^3 \times 9.8 \text{ m} = 98 \text{ dm}^3$$

In the case of multiple scattered pockets (5 rads or more apart), calculate the volume of each one and add them together. Where there are several small close pockets (less than 5 rads apart), visually group them together and use one measurement.

Calculate the one metre volume for the log by adding the ten metre half volumes of the end measurements of the log and dividing by ten or adding the unit volumes and dividing by 2.

$$\begin{aligned}
 \text{Half volume of } 10.0/18 &= 509 \text{ dm}^3 \\
 \text{Half volume of } 10.0/23 &= + 831 \text{ dm}^3 \\
 \text{Full volume of } 10.0/18/23 &= 1340 \text{ dm}^3 \\
 \text{Unit volume of } 01.0/18/23 &= 134 \text{ dm}^3
 \end{aligned}$$

Calculate the length deduction by dividing the defect volume by the unit volume of the log.

$$\frac{98}{134} = 0.731 \text{ m}$$

The rounded length deduction is 0.7 m.

Calculate the net length by subtracting the length deduction from the gross length of the log.

$$\begin{aligned}
 9.8 \text{ m} - 0.7 \text{ m} &= 9.1 \text{ m} \\
 \text{Net Volume} &= 1.219 \text{ m}^3 \text{ or } 1219 \text{ dm}^3
 \end{aligned}$$

Record the net dimension as:

Length	Top	Butt
091	18	23

### 7.3 Field Calculation - Diameter Deduction

To reduce the gross diameter measurement of the log to create a log with net dimensions equal to the net volume in the example, the diameter deduction is possible, if the defect is through running, or runs exactly half way through the log.

$$\begin{aligned}
 \text{Find the unit volume of the } 18 \text{ rad top:} &= 102 \text{ dm}^3 \\
 \text{Find the unit volume of the top defect} &= (03 \times 06 \times 0.4): \\
 \text{and subtract from top unit volume:} &= - 7 \text{ dm}^3 \\
 \text{to get the Net unit volume} &= 95 \text{ dm}^3
 \end{aligned}$$

Find the closest unit volume on the scale stick ( $91 \text{ dm}^3$ ) and record the rad class of 17.

$$\begin{aligned}
 \text{Find the unit volume of the } 23 \text{ rad Butt:} &= 166 \text{ dm}^3 \\
 \text{Find the unit volume of the butt defect} &= (04 \times 08 \times 0.4): \\
 \text{and subtract from the butt unit vol:} &= - 13 \text{ dm}^3 \\
 \text{to get the Net unit volume} &= 153 \text{ dm}^3
 \end{aligned}$$

Find the closest unit volume on the scale stick ( $152 \text{ dm}^3$ ) and record the rad class of 22.

$$\text{Net Volume} = 1.190 \text{ m}^3$$

Record the net dimensions as 098 17 22.

## 7.4 Pocket Rot - Partial Length of Log

The essential measurements required to arrive at rot volumes are:

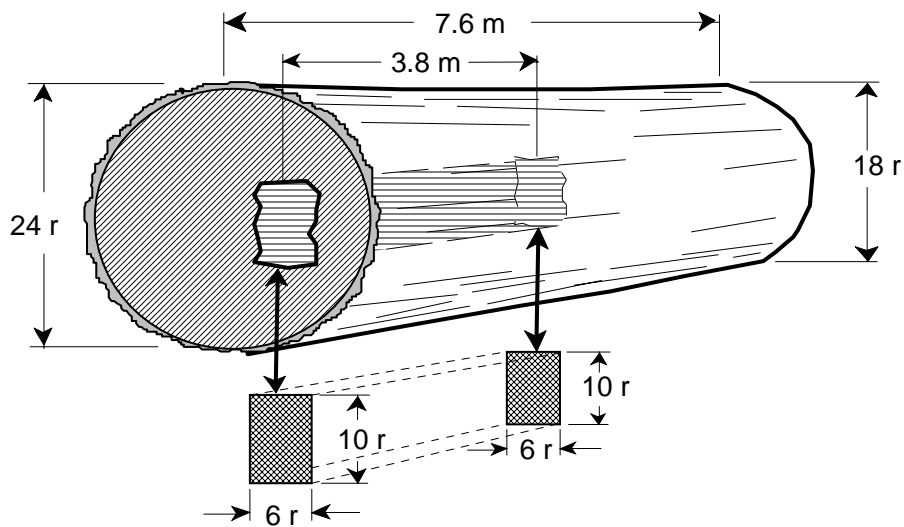
- The estimated defect length in metres to the nearest tenth of a metre,
- If four-sided, the height and width of the defect visible at the log end in rads,
- If round or out of round, the diameter visible at the log end in rads, and
- If triangular, the base width and height visible at the log end in rads.

If multiple, the defects are amalgamated or grouped together to form one defect.

In pocket defects with only one end visible, the diameter of the unseen end is assumed to be the same as at the measured end.

### 7.4.1 Example and Illustration - Pocket Rot, Partial Length

This log is infected with a heart rot in the shape of a pocket, and it is estimated to travel half the length of the log.



*Figure 7.5 A log with partial-length pocket rot.*

### 7.4.2 Field Calculation - Length Deduction

To reduce the gross length measurement of the log to create a log with net dimensions equal to the net volume in the example, the defect is enclosed in a box representing the area of the defect.

In the case of multiple scattered pockets (5 rads or more apart), calculate the volume of each one and add them together. Where there are several small close pockets (less than 5 rads apart), visually group them together and use one measurement.

Calculate the unit volumes of the defect ends by multiplying the height by the width by the factor of 0.4 to convert the end area of the defect from "square rads" to unit volumes, and multiply by the defect length to obtain the defect volume.

$$\begin{aligned} \text{Unit volume} &= 6 \text{ R} \times 10 \text{ R} \times 0.4 = 24 \text{ dm}^3 \\ \text{Defect Volume} &= 24 \text{ dm}^3 \times 3.8 \text{ m} = 91 \text{ dm}^3 \end{aligned}$$

Calculate the average unit volume for the log by adding the unit volumes and dividing by two:

$$\begin{aligned} \text{Unit volume of 18} &= 102 \text{ dm}^3 \\ \text{Unit volume of 24} &= \underline{+ 181 \text{ dm}^3} \\ \text{Sum of unit volumes} &= 283 \text{ dm}^3 \\ \text{Average unit volume} &= 141.5 = 142 \text{ dm}^3 \end{aligned}$$

Calculate the length deduction by dividing the defect volume by the average unit volume of the log.

$$\frac{91}{142} = 0.641 \text{ m}^3$$

Length deduction is rounded to 0.6 m.

Calculate the net length by subtracting the length deduction from the gross length of the log.

$$\begin{aligned} 7.6 - 0.6 &= 7.0 \text{ m} \\ \text{Net Volume} &= 0.989 \text{ m}^3 \text{ or } 989 \text{ dm}^3 \end{aligned}$$

Record the net dimensions as:

Length	Top	Butt
070	18	24