

**APPENDIX C**  
**DEDUCT VALUE CURVES-ASPHALT SURFACED JOINTED CONCRETE PAVEMENT**

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**C-1. Introduction**

In this appendix is furnished the deduct value curves essential for computing the PCI of a pavement sample unit as used in the manual PAVER system (figs C-1 through C-40).

**C-2. Type of pavements**

The curves are provided in alphabetical order according to distress types, covering first asphalt surfaced pavement, then concrete pavements.

**C-3. User instructions**

As explained in chapter 3, the following five steps are involved in calculating the PCI for a sample unit:

*a. Step 1.* Each sample unit is inspected and distress data recorded on DA Form 5145-R for concrete or DA Form 5146-R for bituminous pavements.

*b. Step 2.* The deduct values are determined from the deduct value curves in this appendix. The following examples are given for a sample unit 25 feet by 100 feet (2500 square feet):

(1) For 6 square feet of distress type 1 (alligator cracking) low severity, the density equals

$$\frac{6 \times}{2500} 100 = .24.$$

Using figure C-1, find .24 on the distress density line. Proceed vertically to the L (Low Severity) curve, then horizontally to the left to read a deduct value of 4.

(2) For 16 square feet of distress type 1 (Alligator Cracking) Medium Severity the density equals

$$\frac{16 \times}{2500} 100 = .64.$$

Using figure C-1, find .64 on the distress density line. Proceed vertically to the M (Medium Severity) curve, then horizontally to the left to read a deduct value of 17.

(3) For 50 square feet of distress type 15 (Rutting) Low Severity, the density equals

$$\frac{50 \times 100}{2500} = 2.0.$$

Using figure C-15, find 2.0 on the distress density line. Proceed vertically to the L (Low Severity) curve, then to the left to read a deduct value of 13.

*c. Step 3.* A total deduct value is computed by summing all individual deduct values in the sample unit.

*d. Step 4.* The corrected deduct value (CDV) is computed. In the example given in figure 3-3, the total deduct value (the sum of all deduct values) was found to be 45. The value of q (the number of individual deducts whose value is greater than 5) was found to be 2. Using figure C-20 find 45 on the TDV line. Proceed vertically to the line q equals 2, then to the left to read a CDV of 33.

*e. Step 5.* The PCI is computed using the relation  $PCI = 100CDV$ . In the example,  $PCI = 100 \cdot 33 = 67$ ; the rating is good.

**C-4. Deduct value curves**

The deduct value curves and the corrected deduct value curves provided in this appendix are needed to solve steps 2 and 4 above.

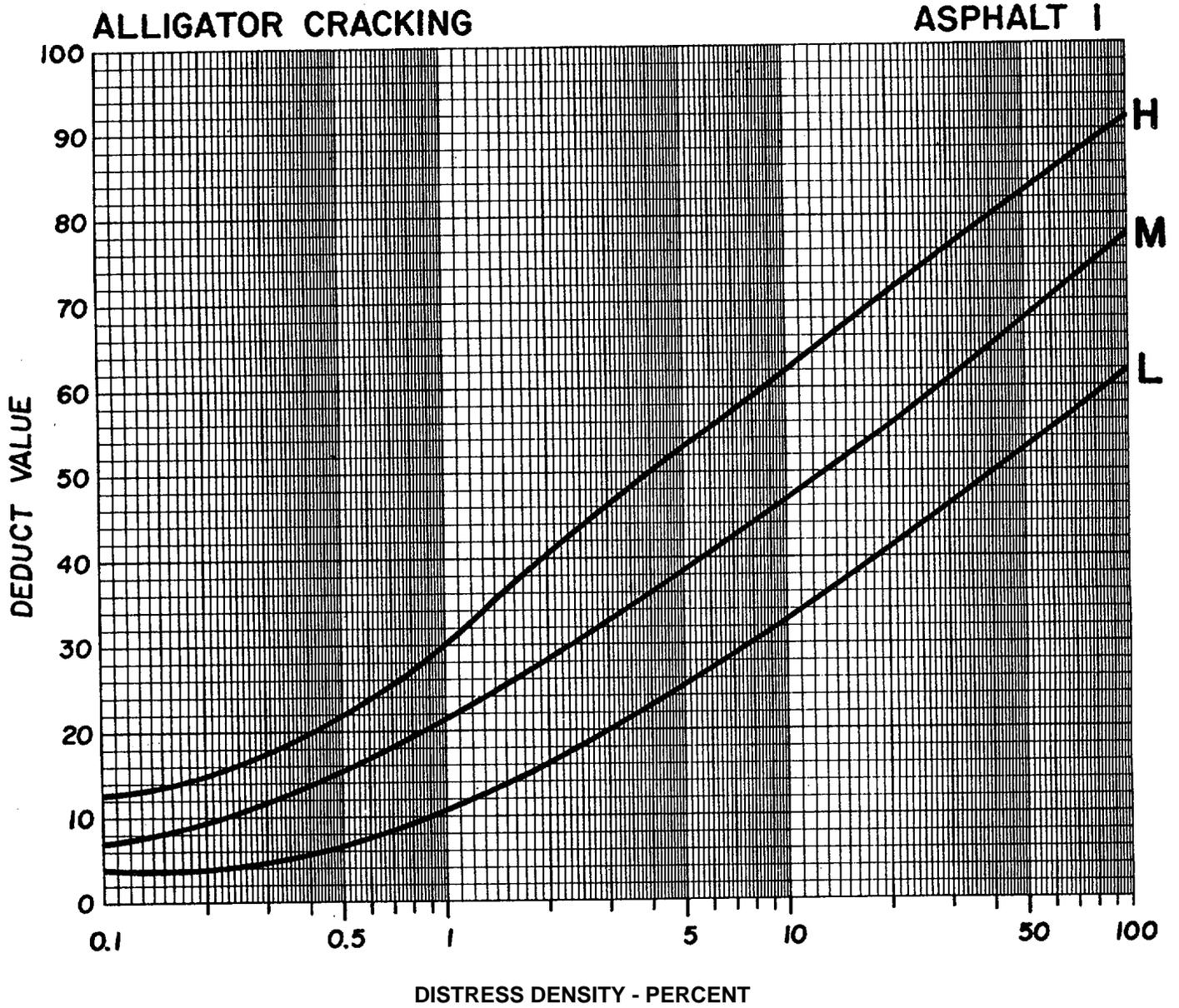


Figure C-1. Deduct value curves for alligator cracking.

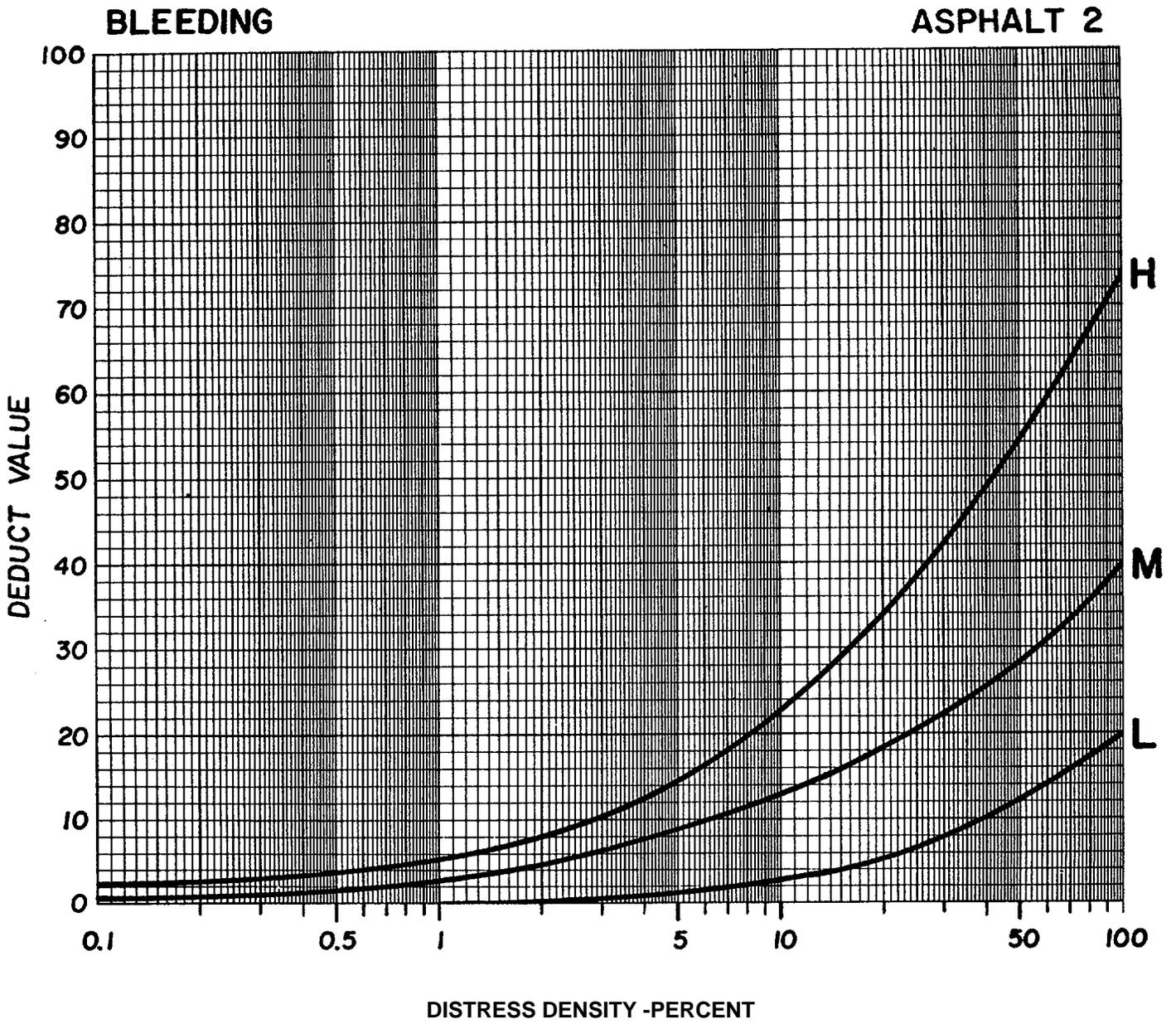


Figure C-2. Deduct value curves for bleeding.

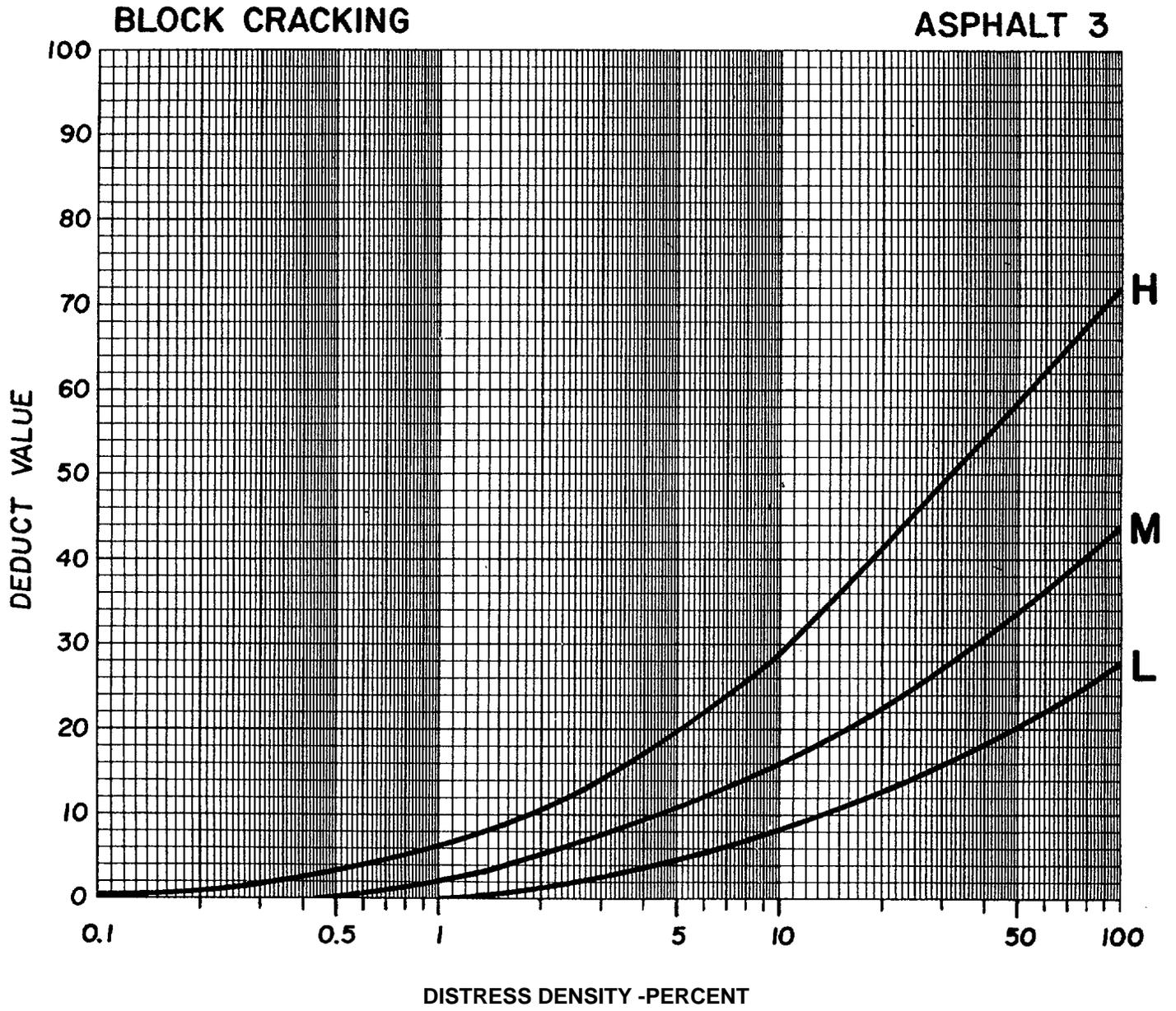


Figure C-3. Deduct value curves for block cracking.

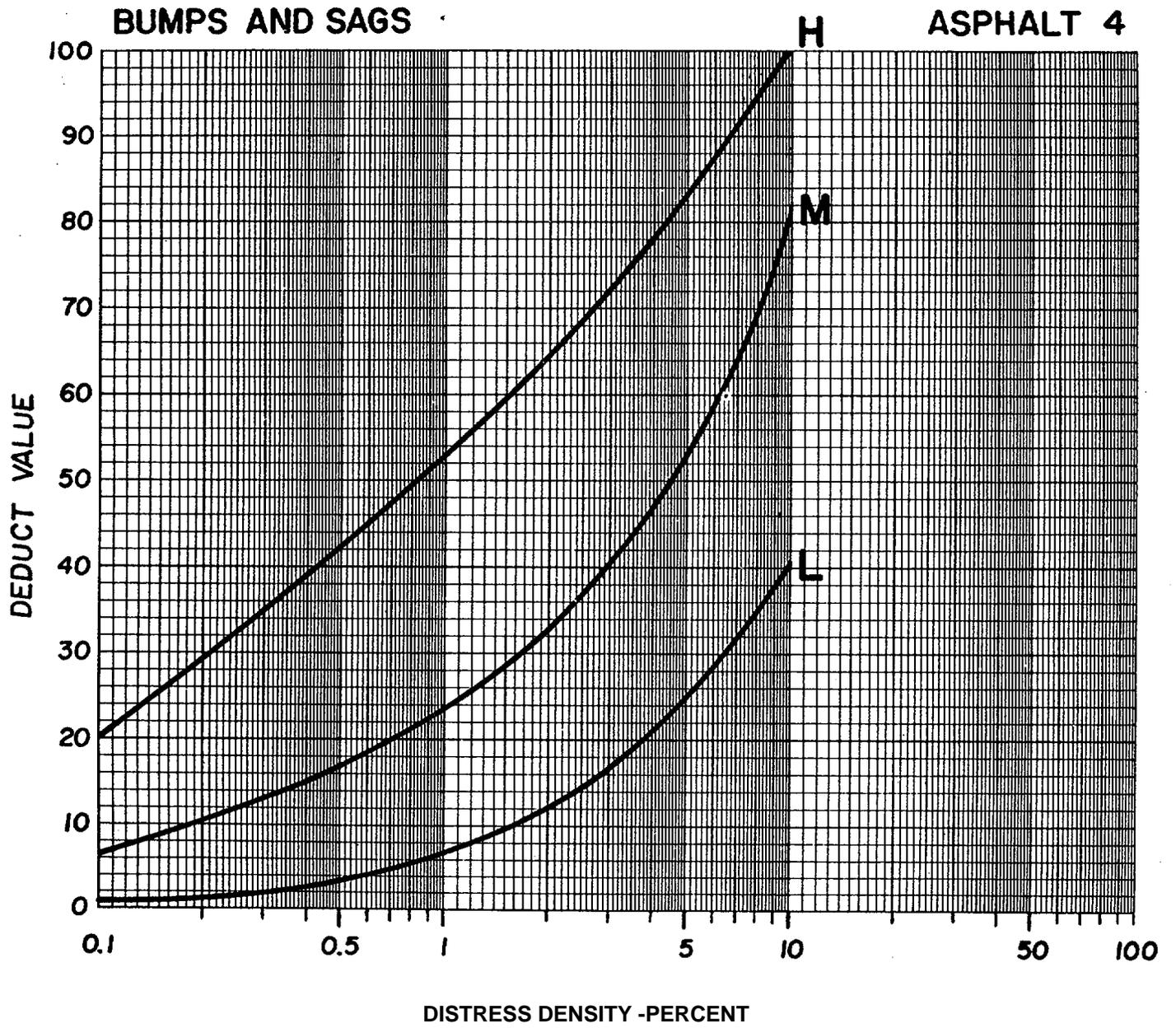


Figure C-4. Deduct value curves for bumps and sags.

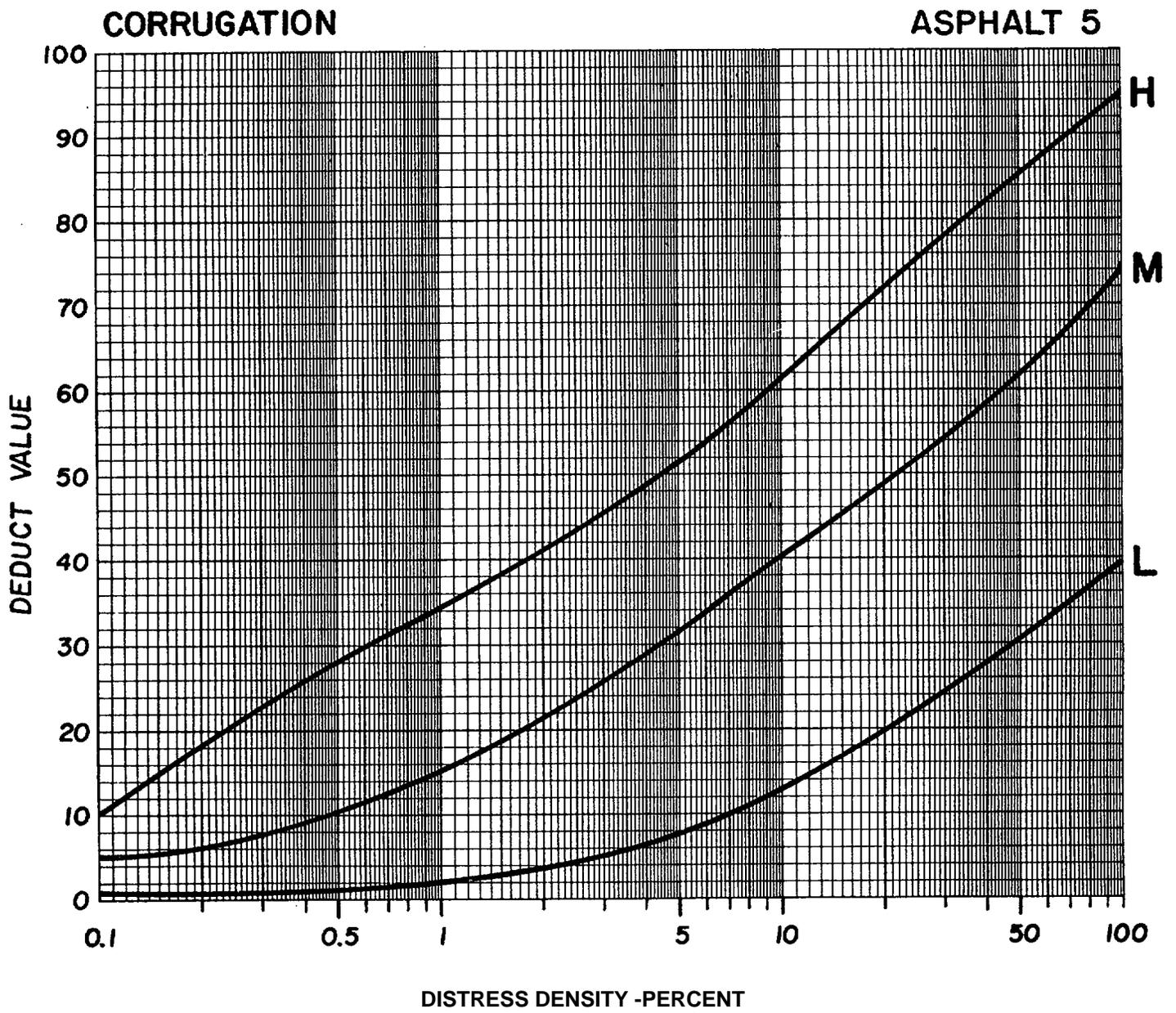


Figure C-5. Deduct value curves for corrugation.

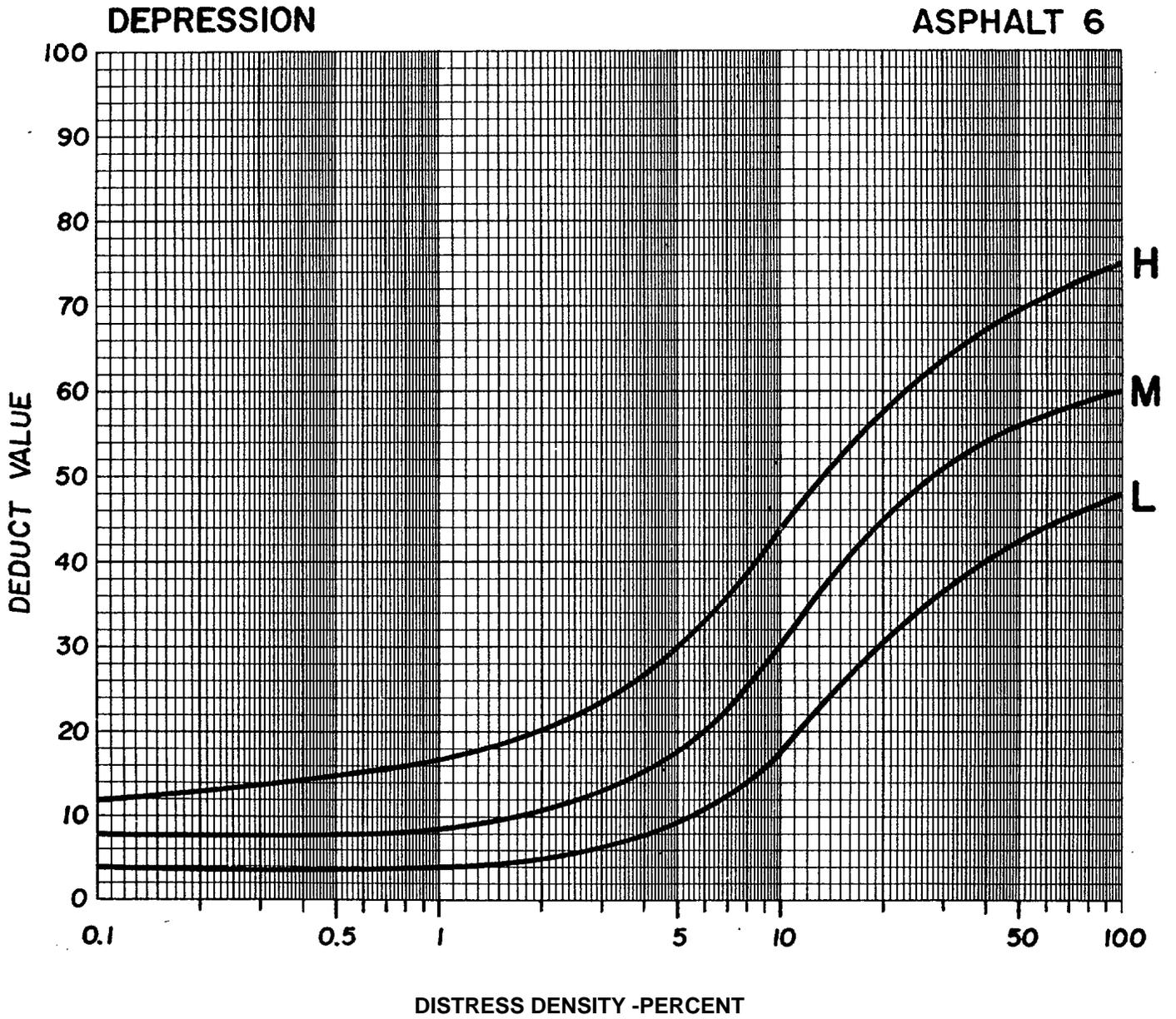


Figure C-6. Deduct value curves for depression.

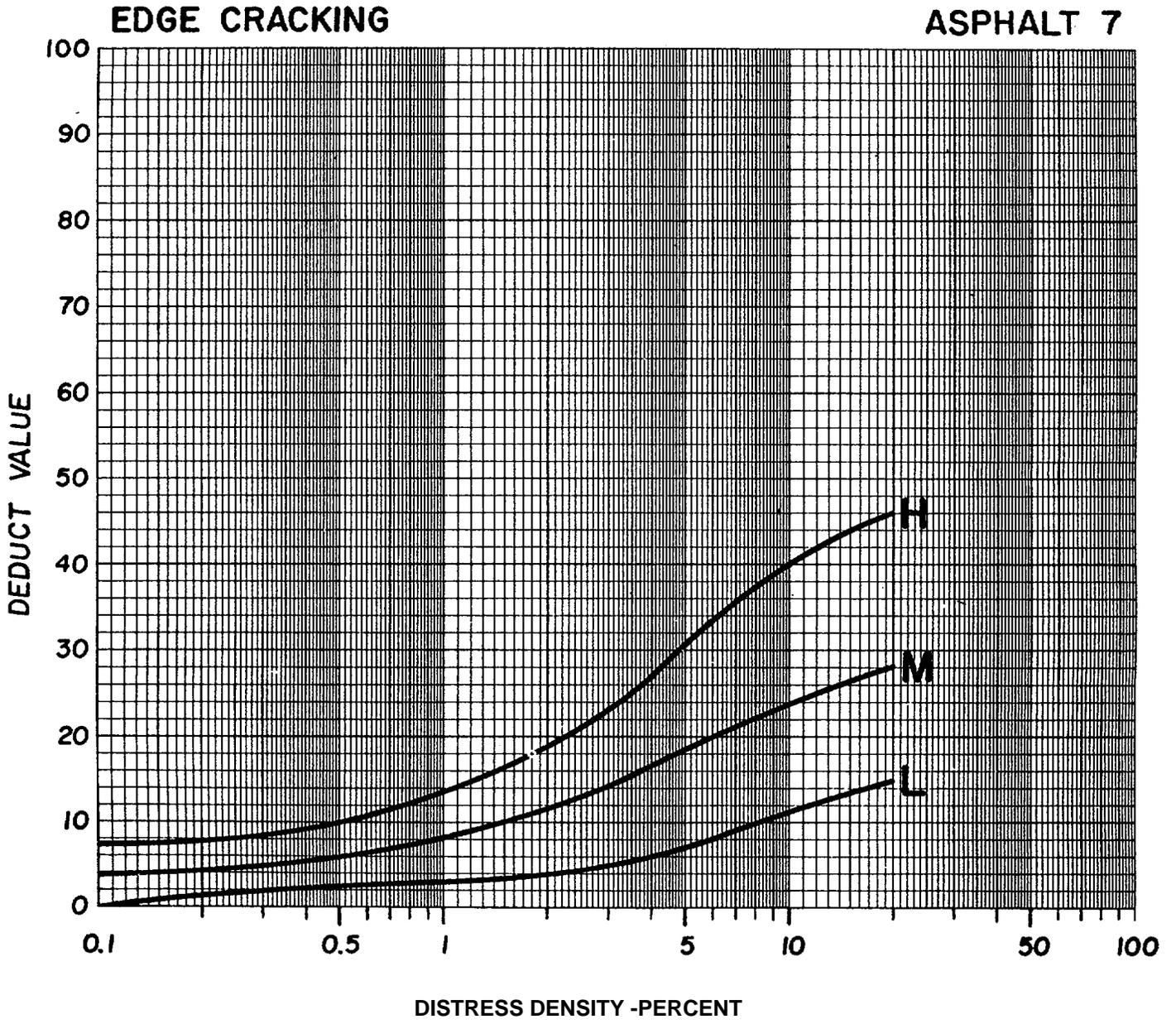


Figure C-7. Deduct value curves for edge cracking.

# JOINT REFLECTION CRACKING

# ASPHALT 8

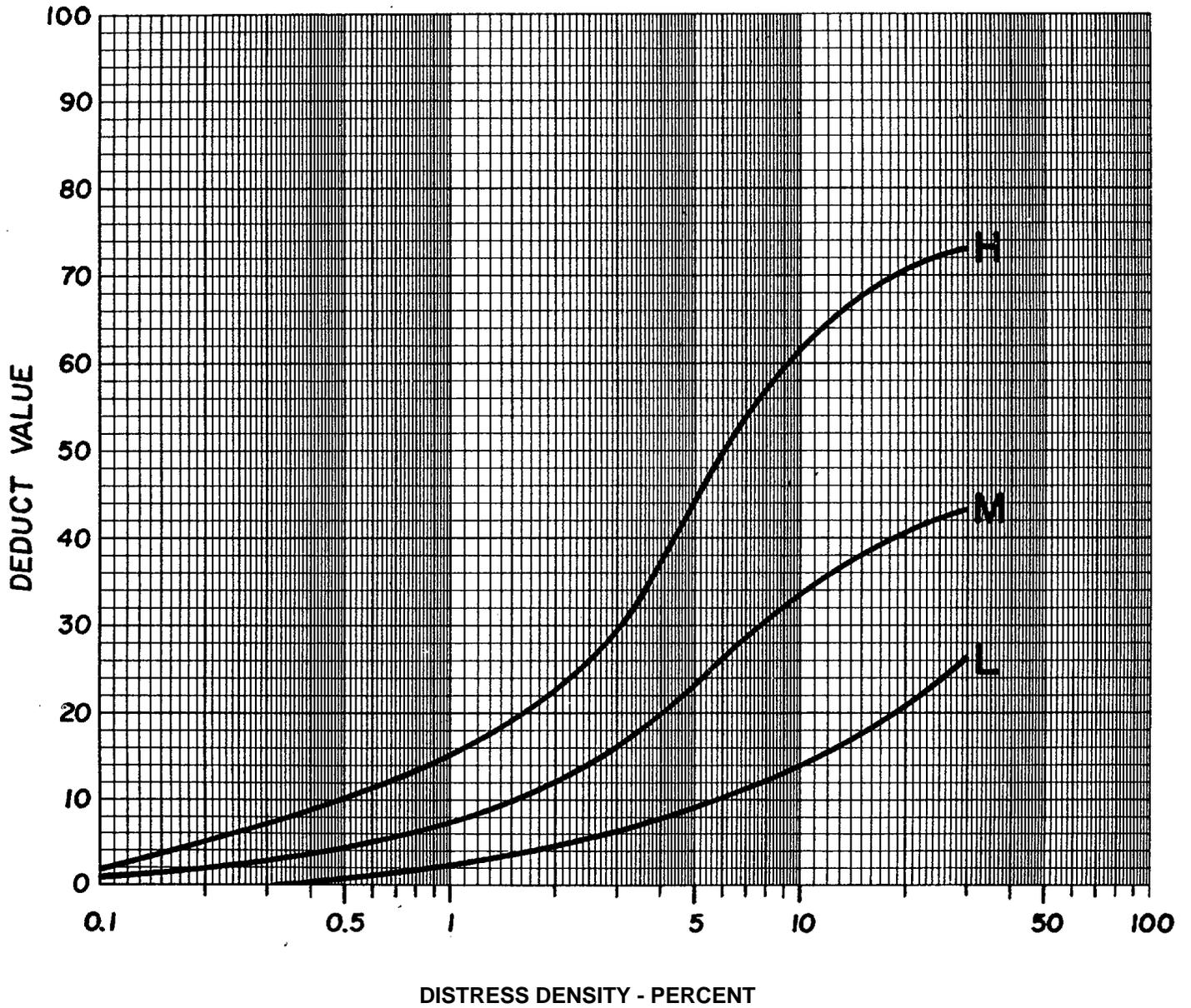


Figure C-8. Deduct value curves for joint reflection cracking.

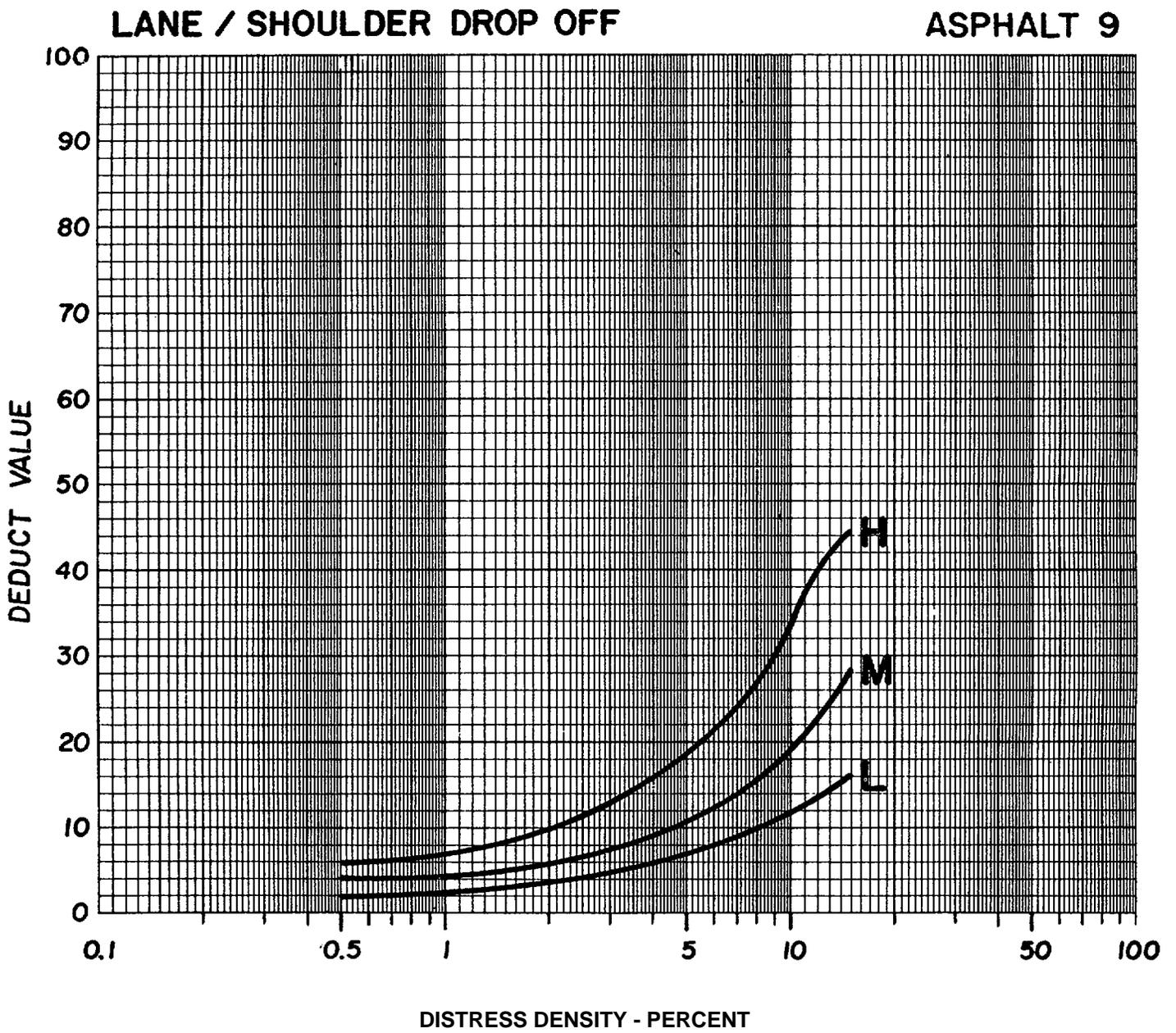


Figure C-9. Deduct value curves for lane/shoulder drop off

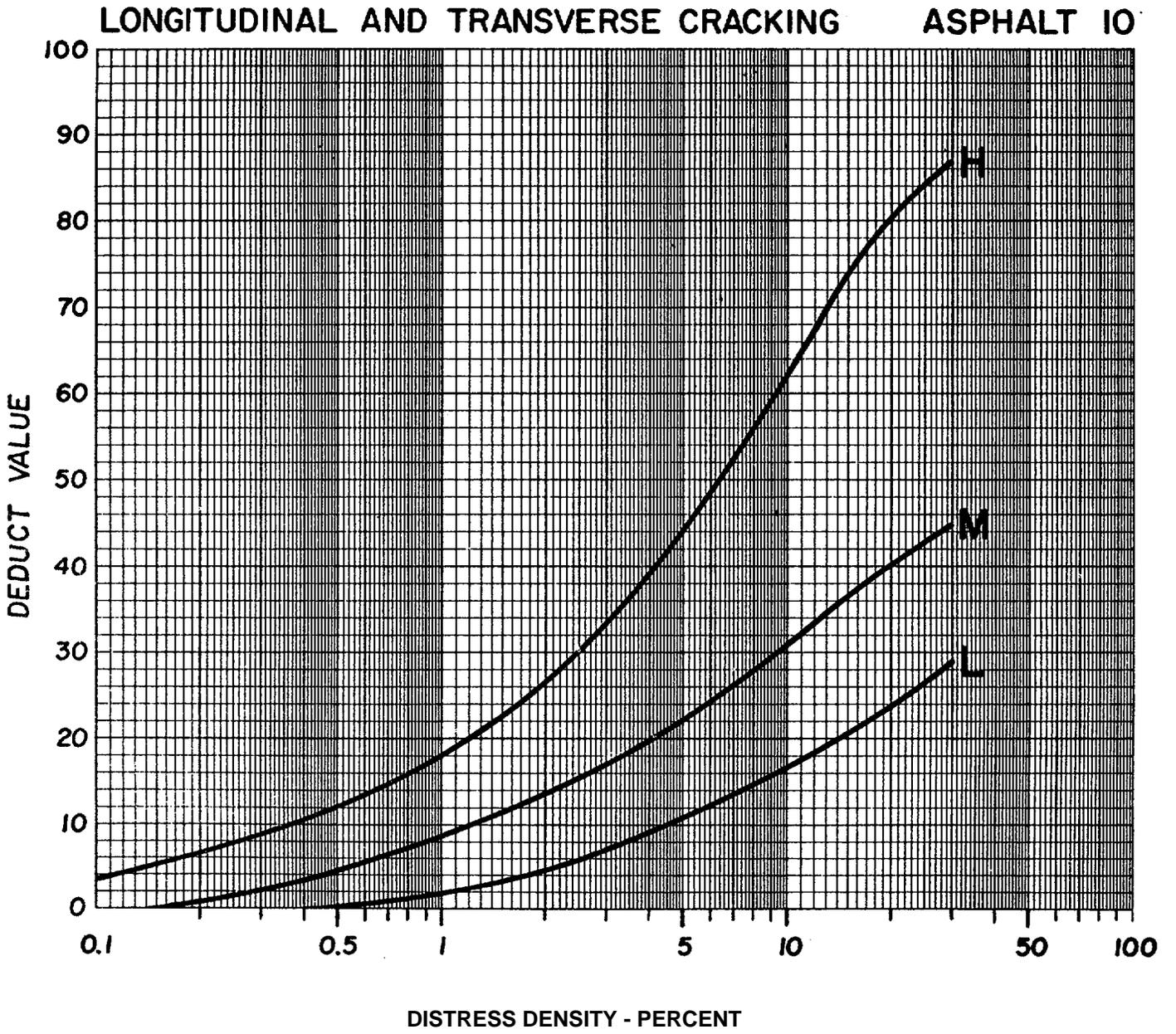


Figure C-10. Deduct value curves for longitudinal and transverse cracking.

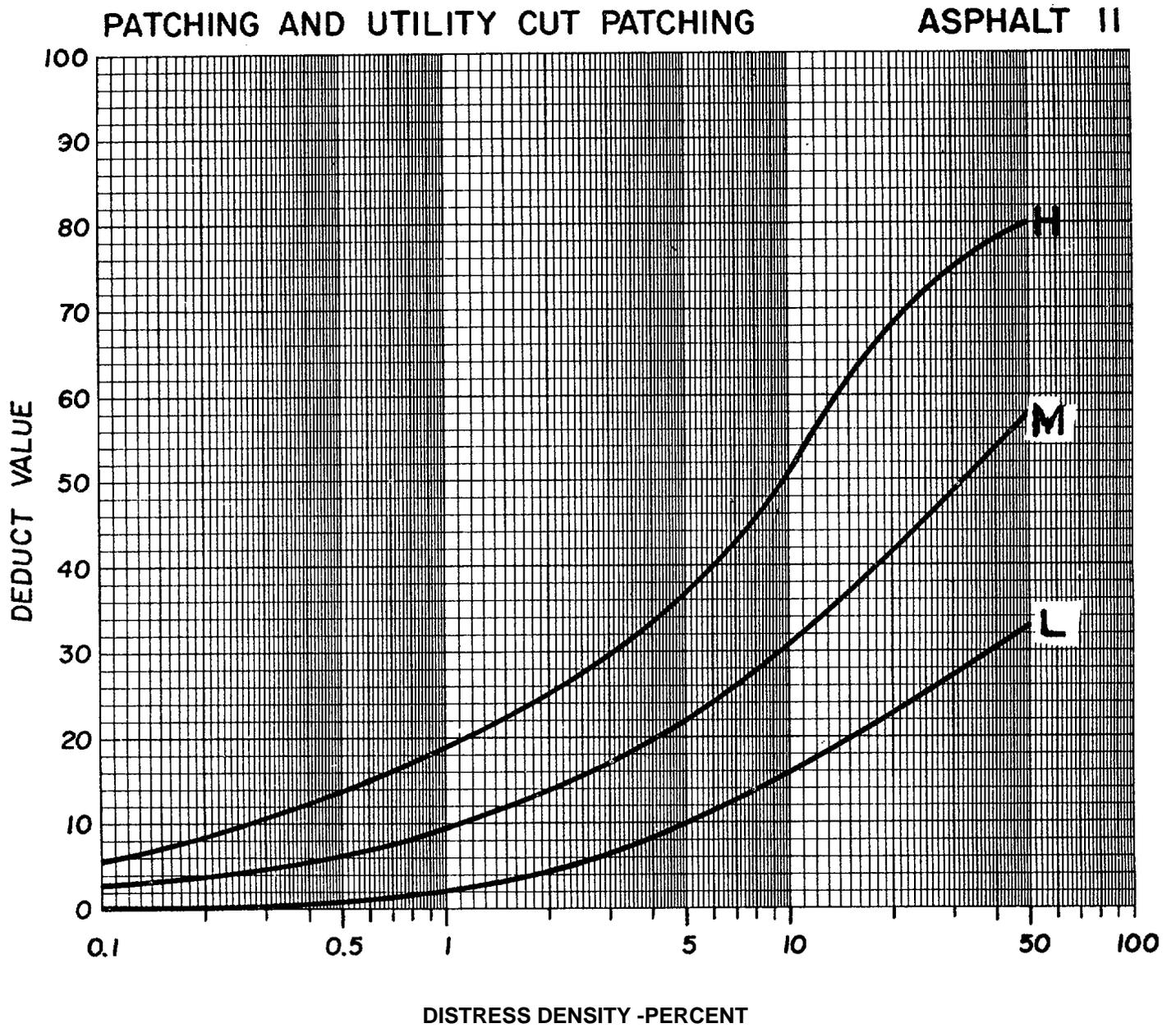


Figure C-11. Deduct value curves for patching and utility cut patching.

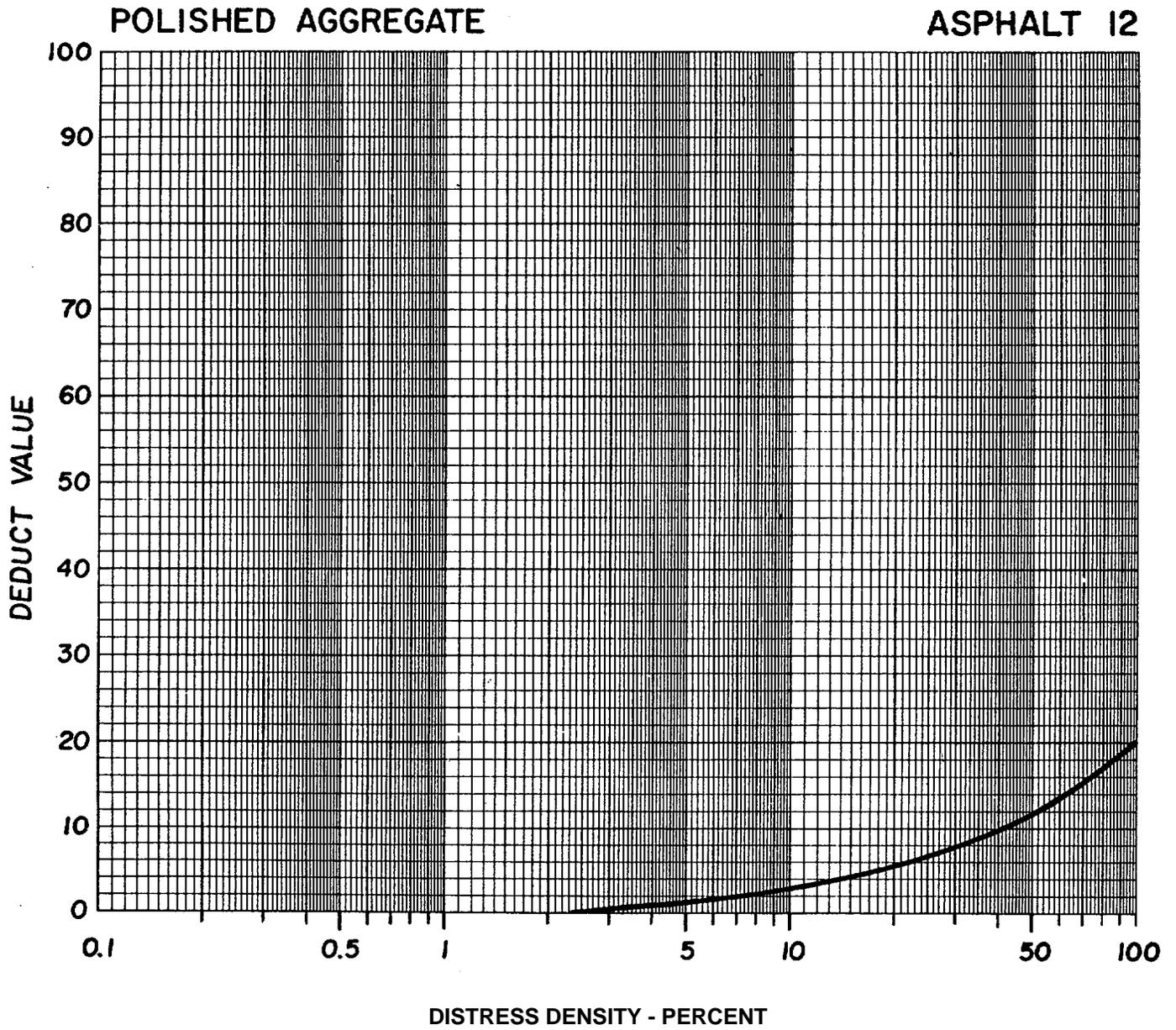


Figure C-12. Deduct value curves for polished aggregate.

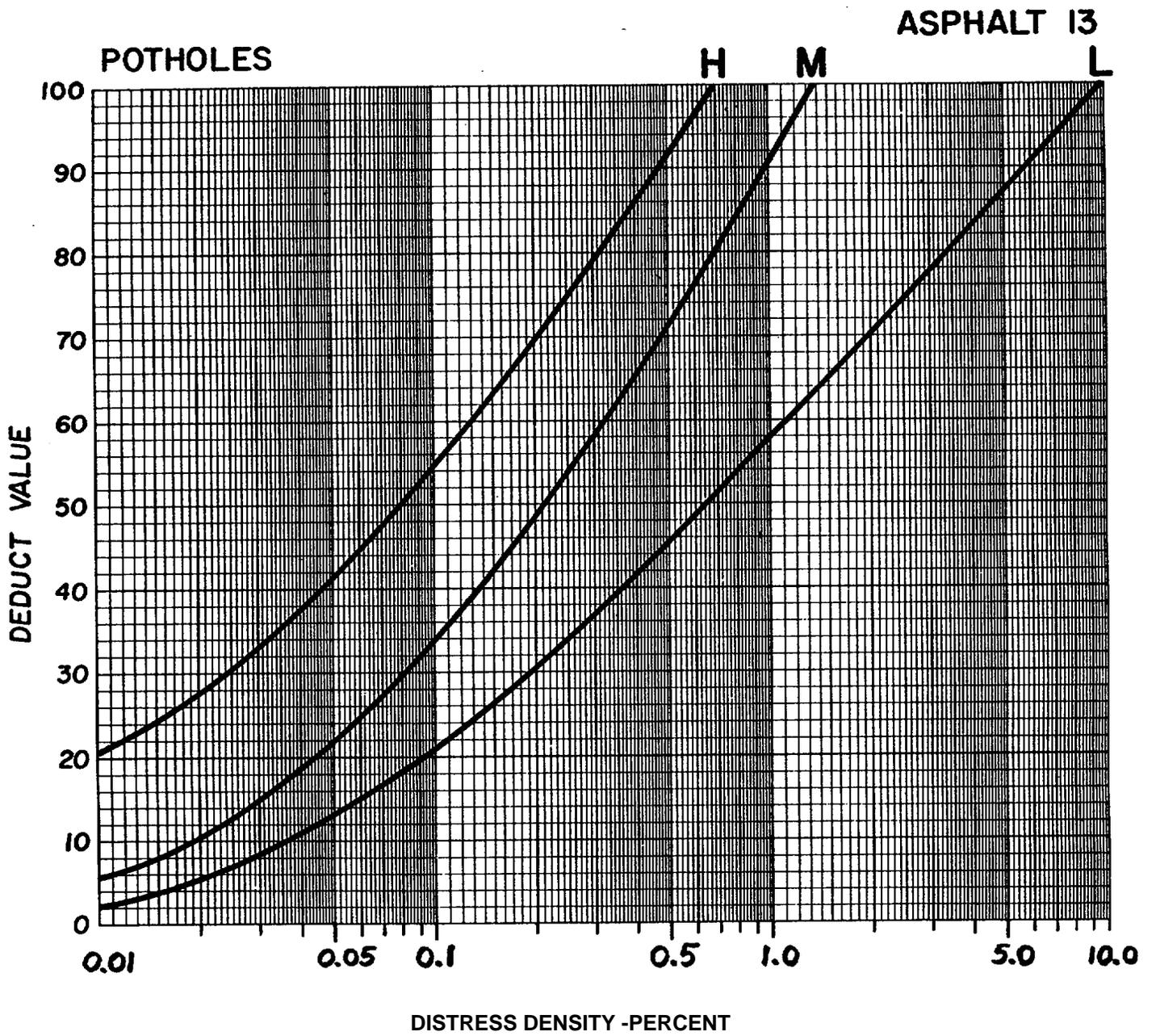


Figure C-13. Deduct value curves for potholes.

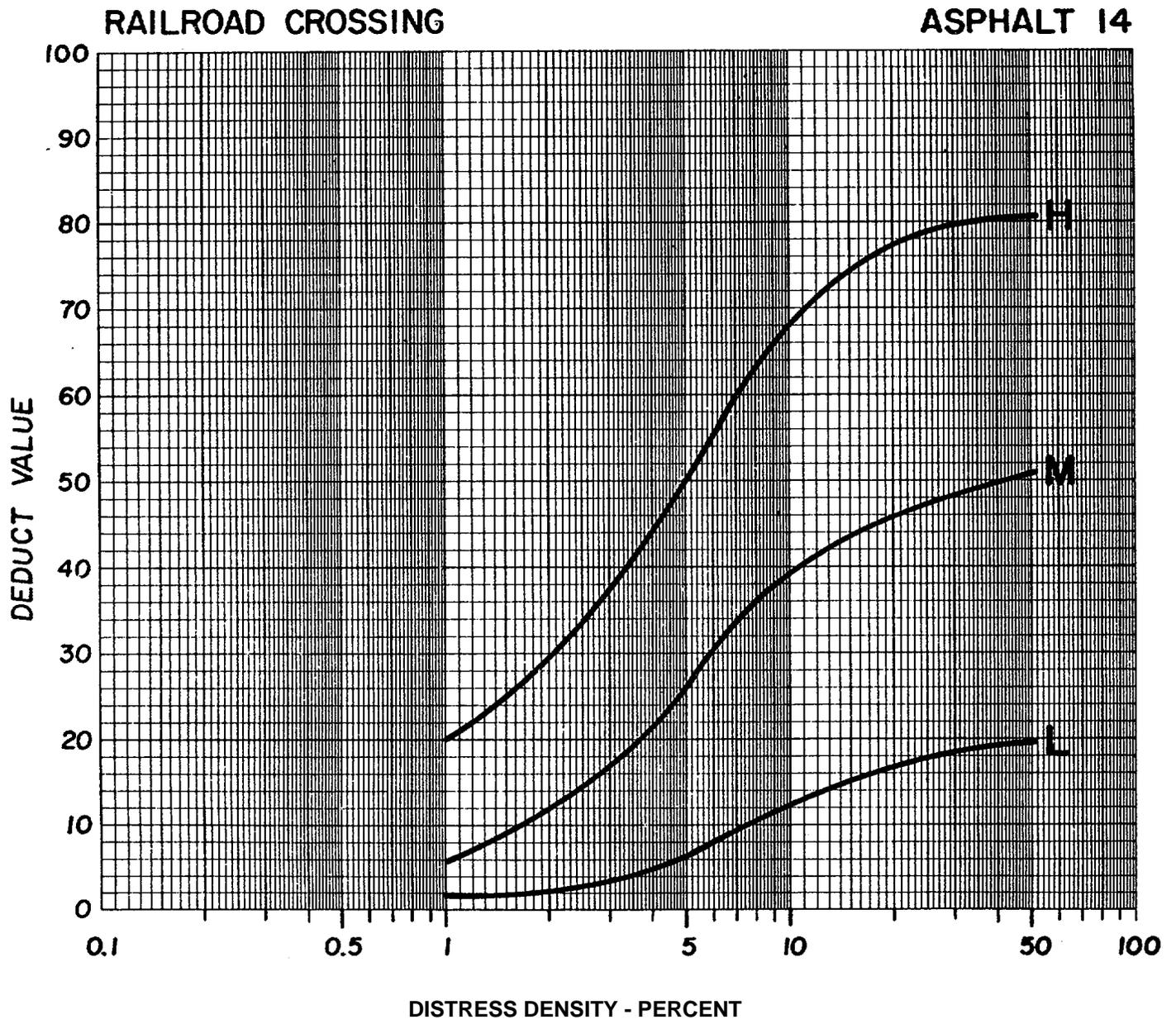


Figure C-14. Deduct value curves for railroad crossing.

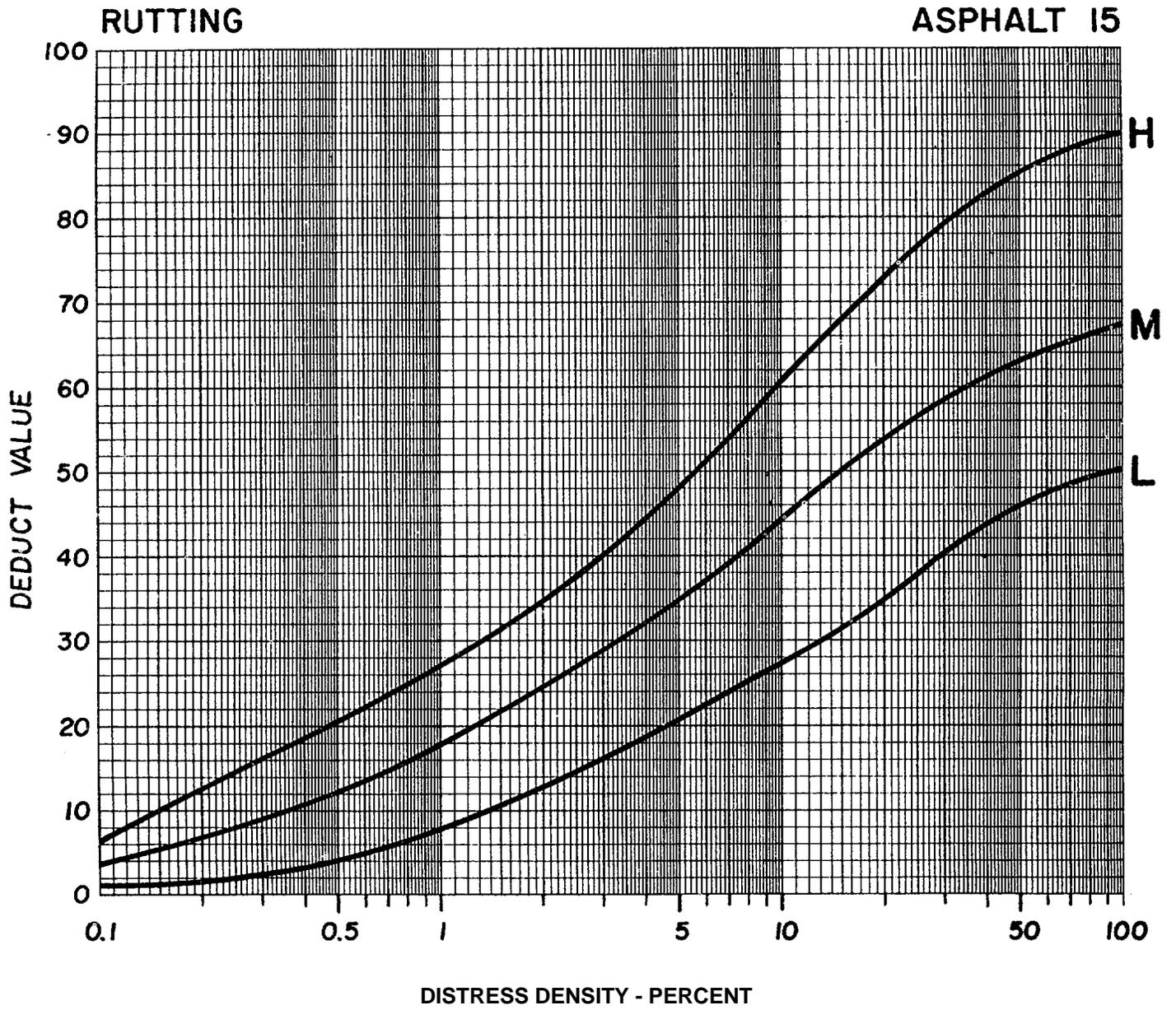


Figure C-15. Deduct value curves for rutting.

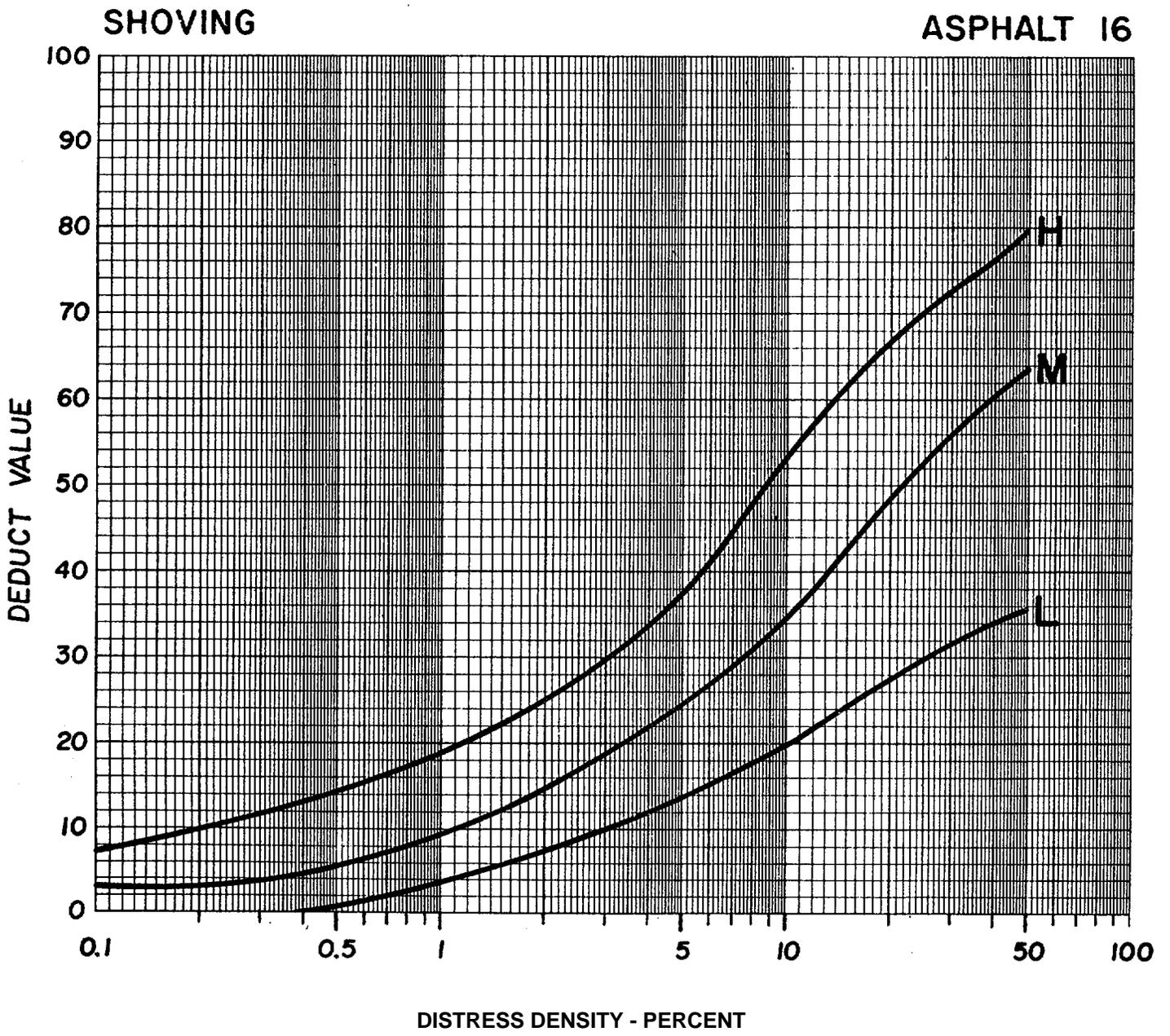


Figure C-16. Deduct value curves for shoving.



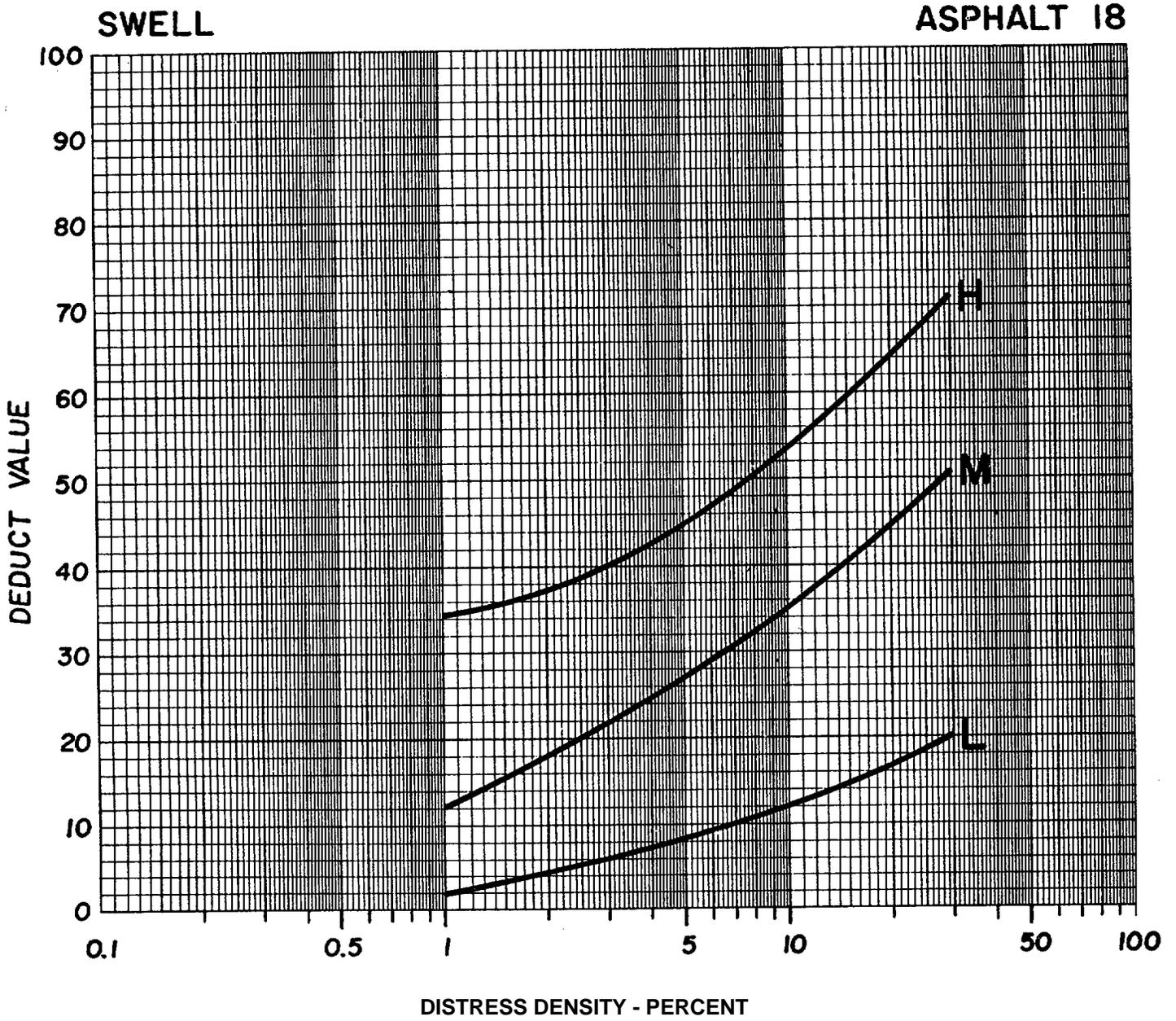


Figure C-18. Deduct value curves for swell.

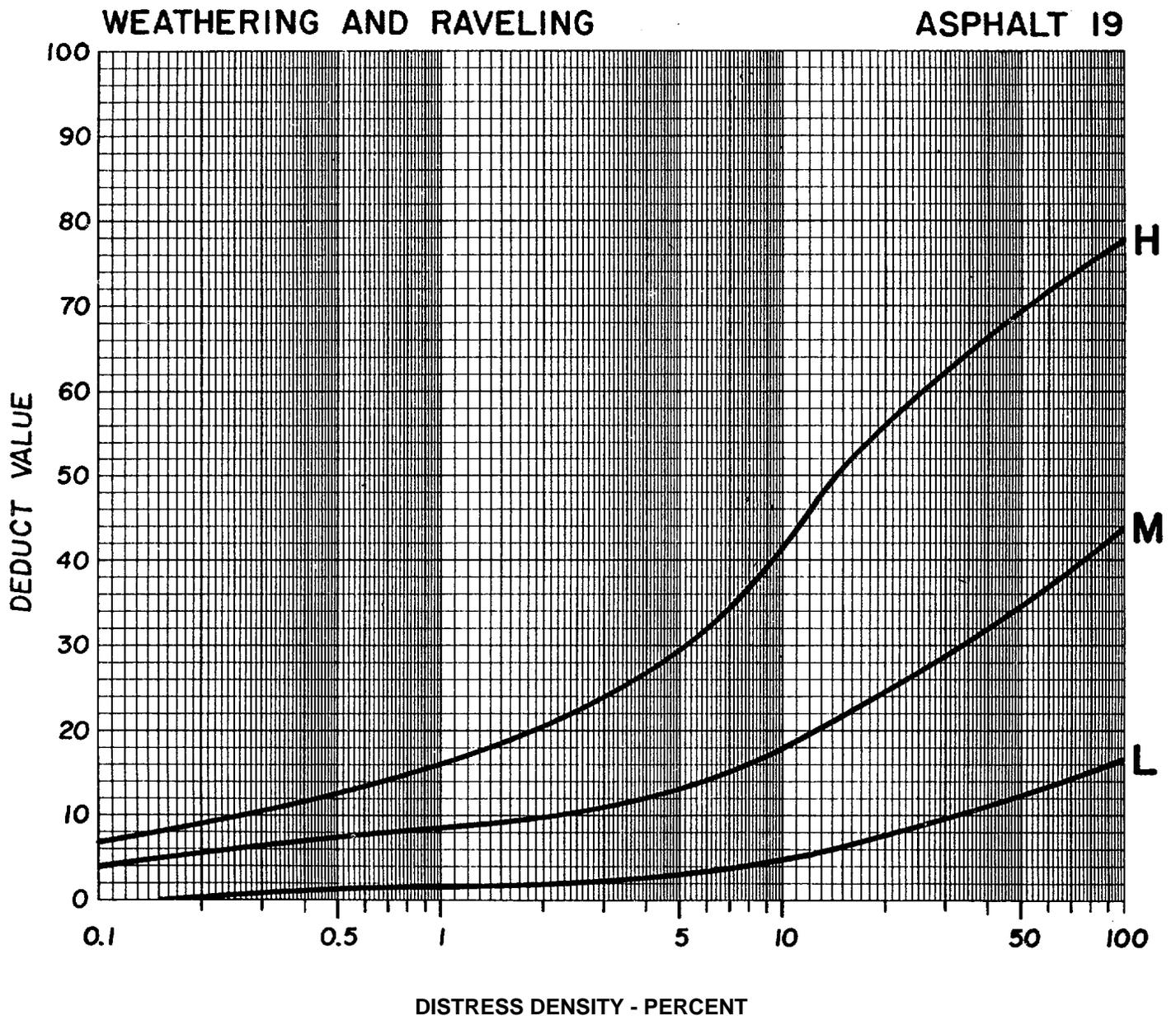


Figure C-19. Deduct value curves for weathering and raveling.

ASPHALT

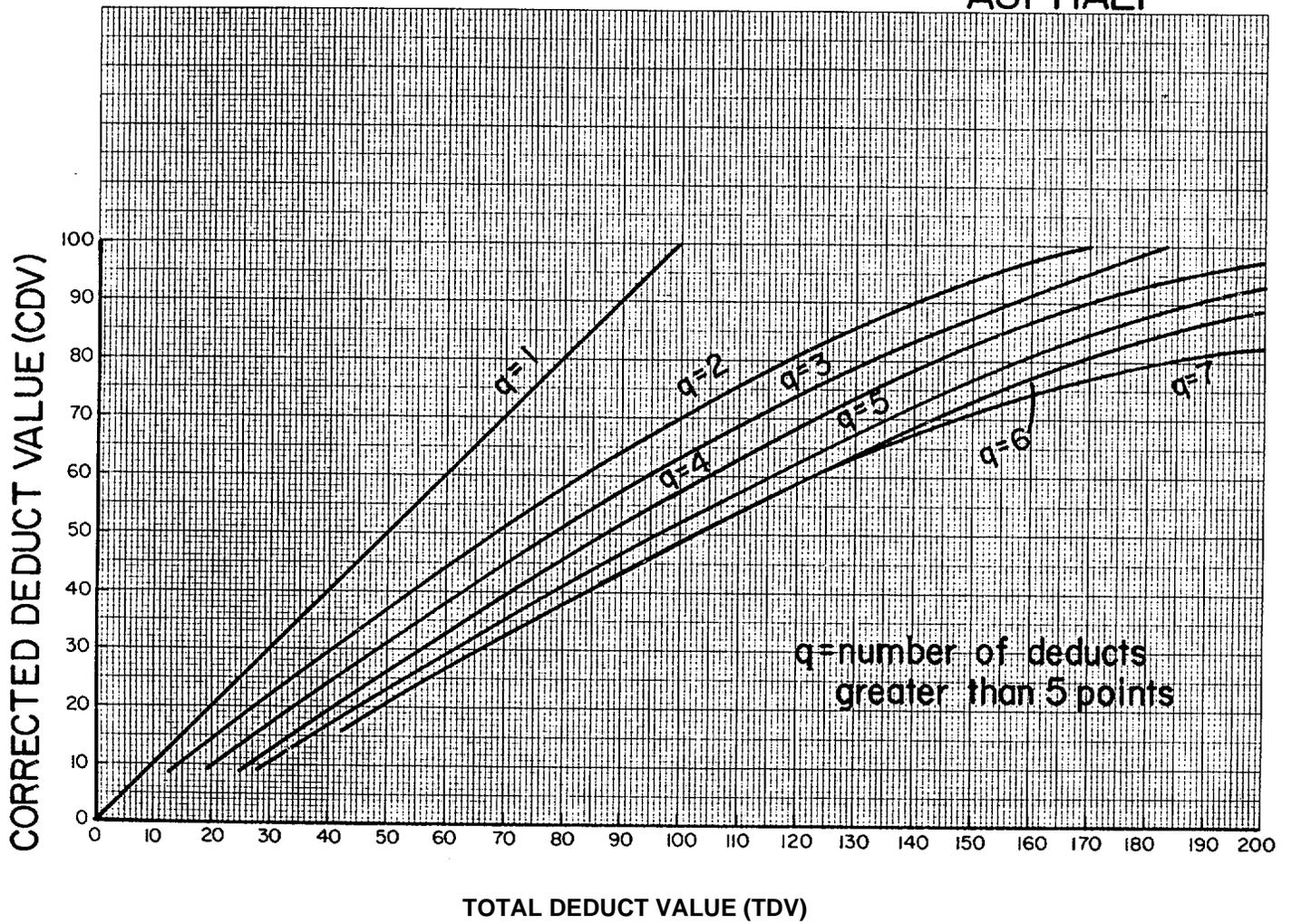


Figure C-20. Corrected deduct value curves for asphalt-surfaced pavements.

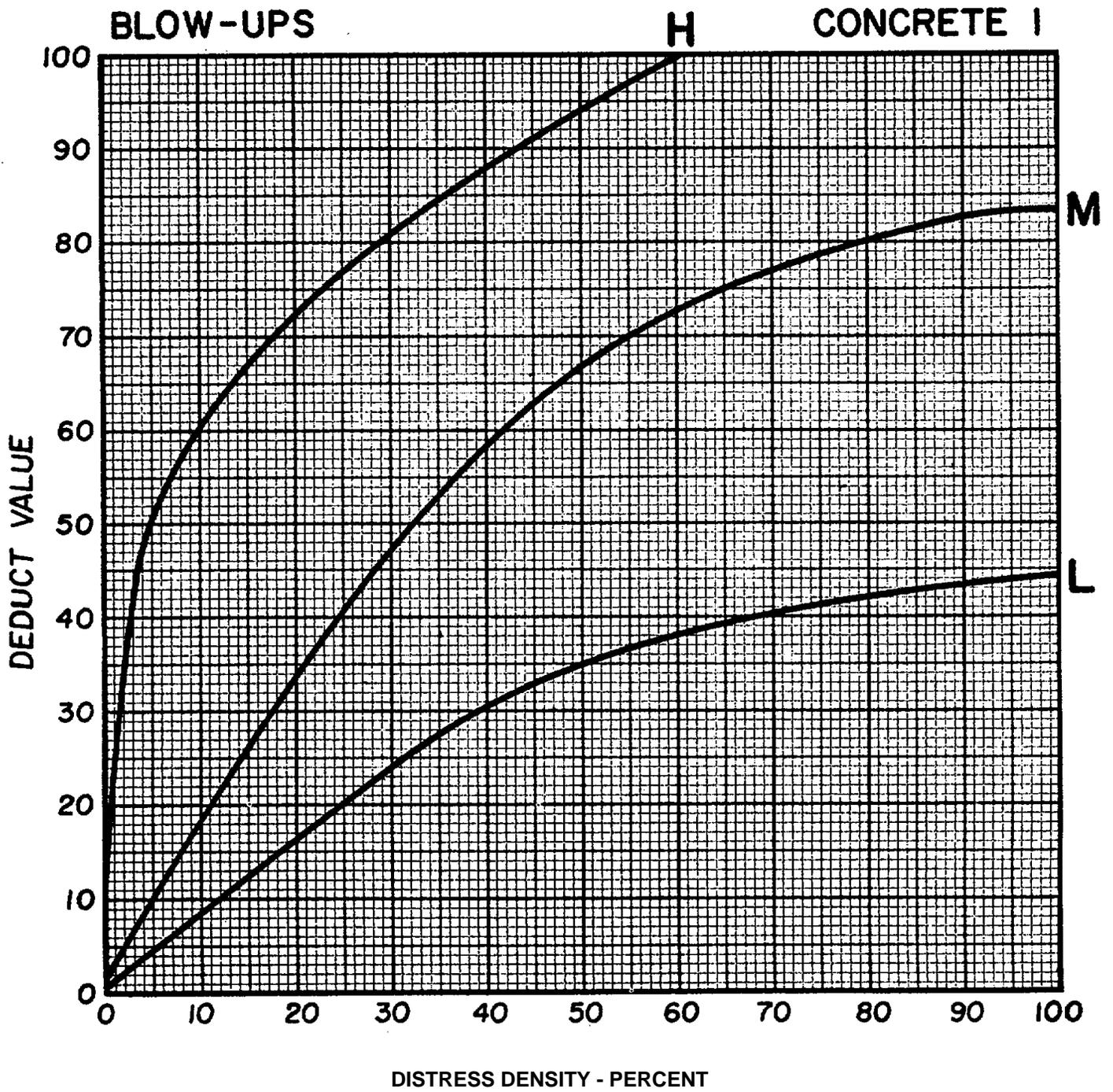


Figure C-21. Deduct value curves for blow-ups.

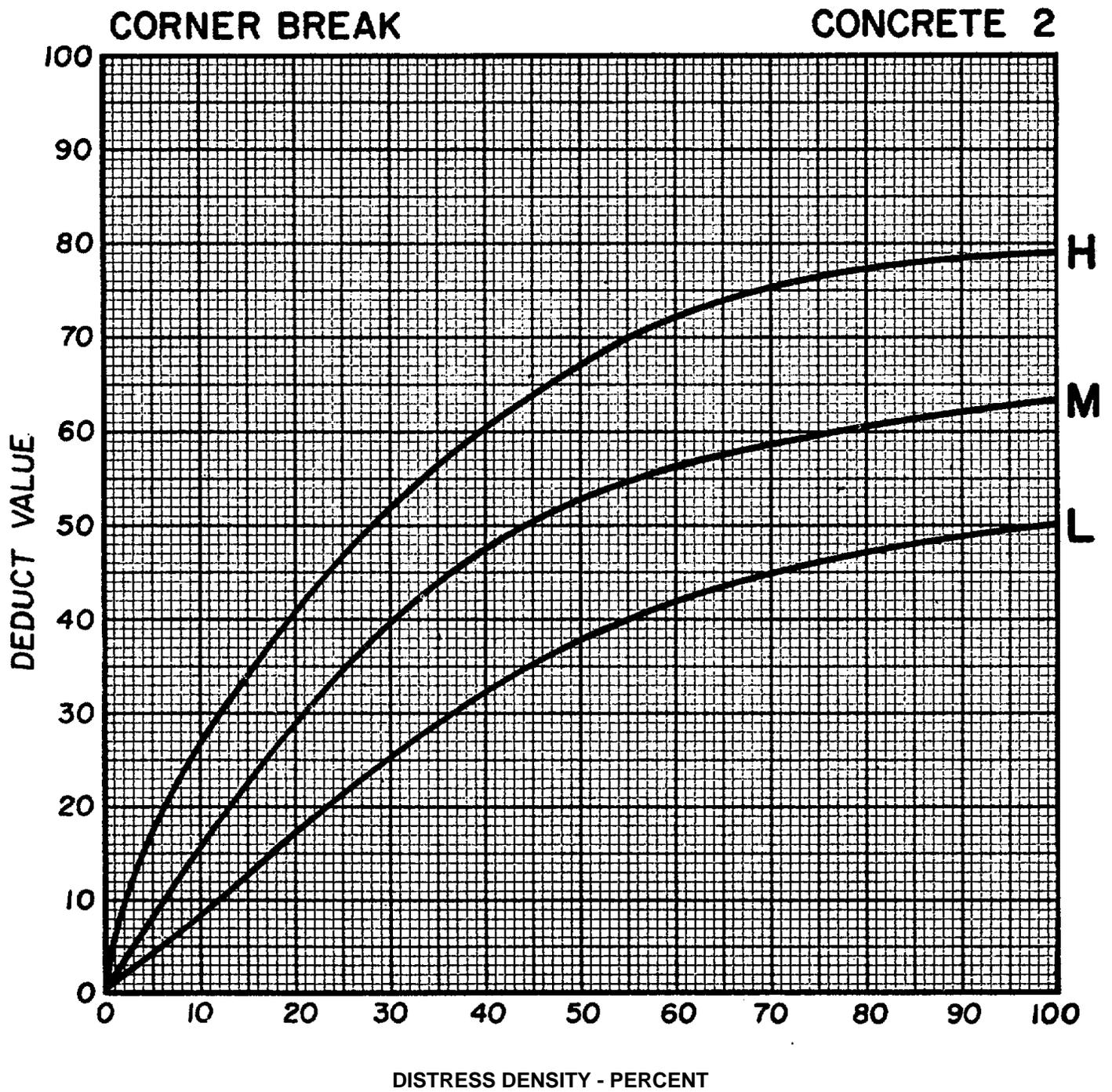


Figure C-22. Deduct value curves for corner break.

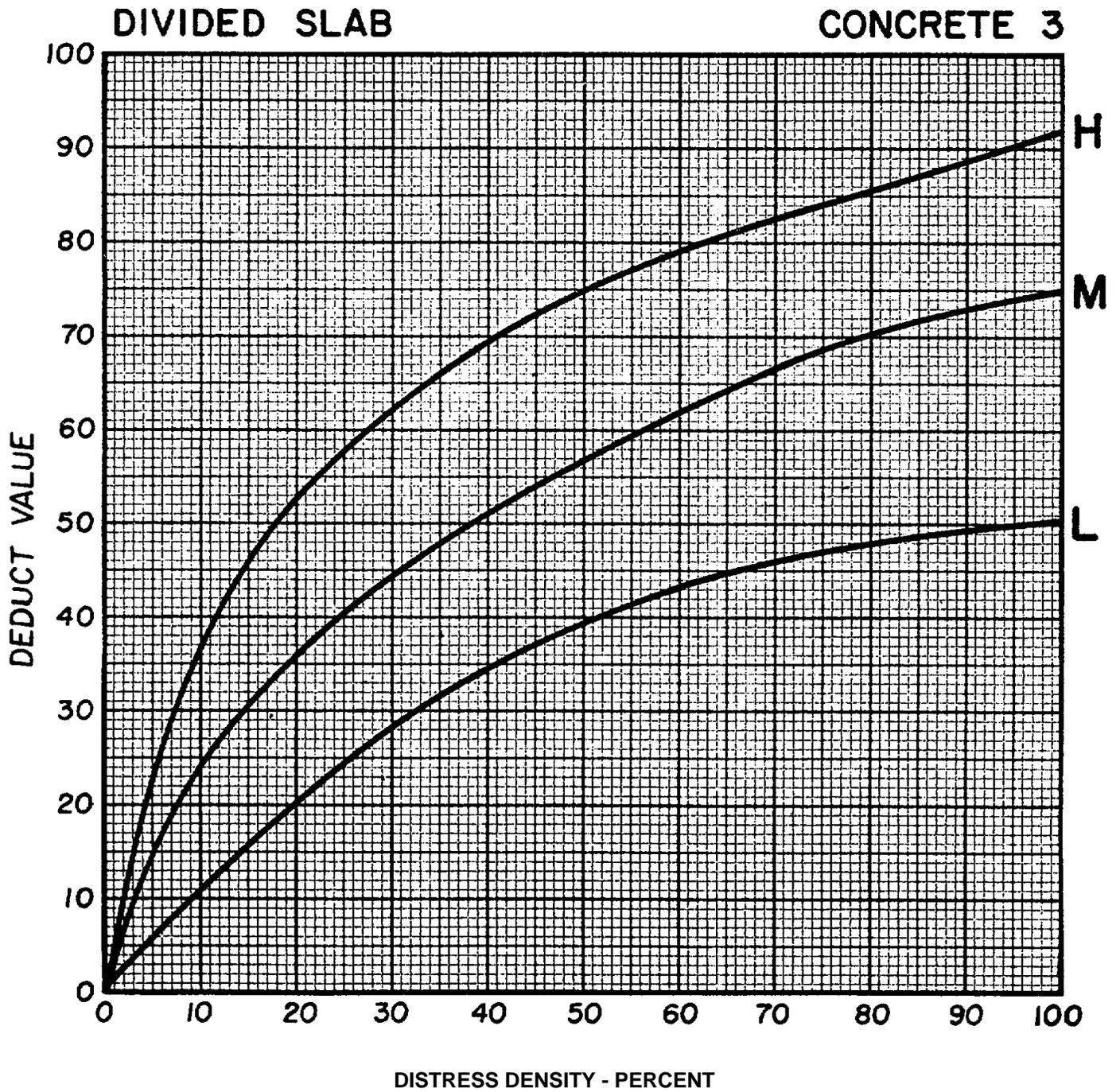


Figure C-23. Deduct value curves for divided slab.

DURABILITY ("D") CRACKING CONCRETE 4

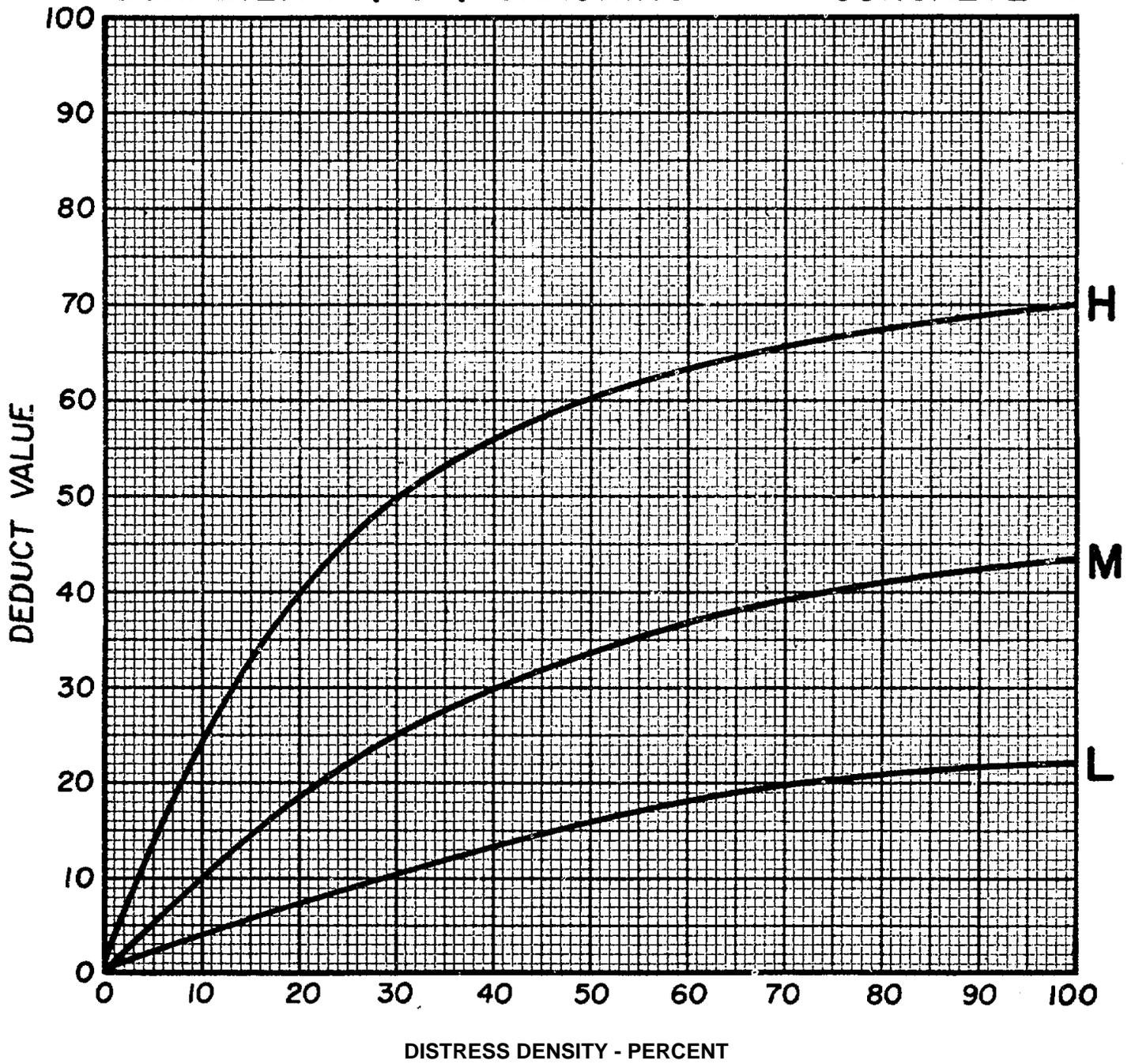


Figure C-24. Deduct value curves for durability ("D") cracking.

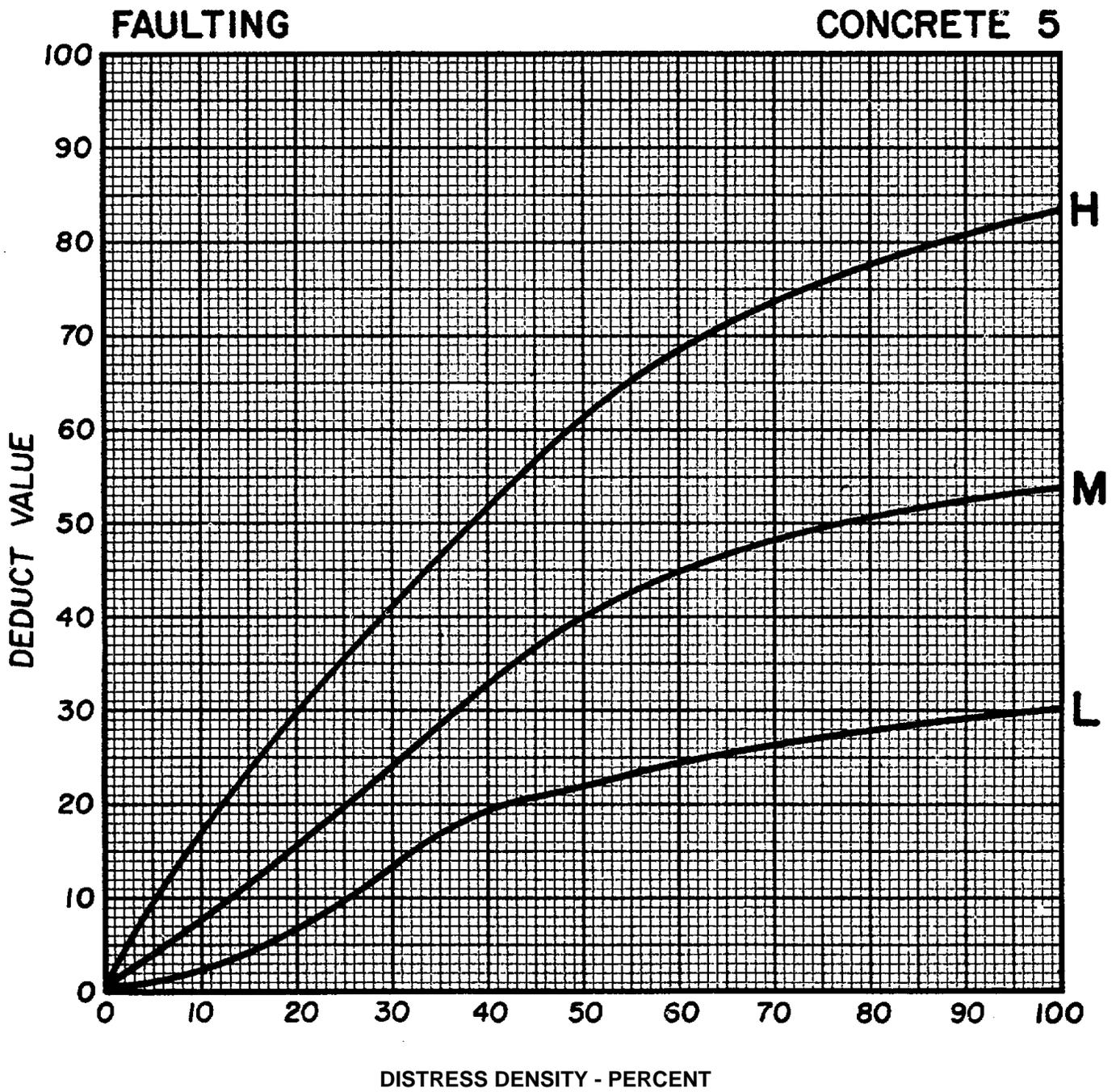


Figure C-25. Deduct value curves for faulting.

## JOINT SEAL DAMAGE

## CONCRETE 6

The deduct values for the three levels of severity are:

LOW	2 points
MEDIUM	4 points
HIGH	8 points

Joint seal damage is not rated by density. The severity of the distress is determined by the sealant's overall condition for a particular sample unit.

*Figure C-26. Deduct values for joint seal damage.*

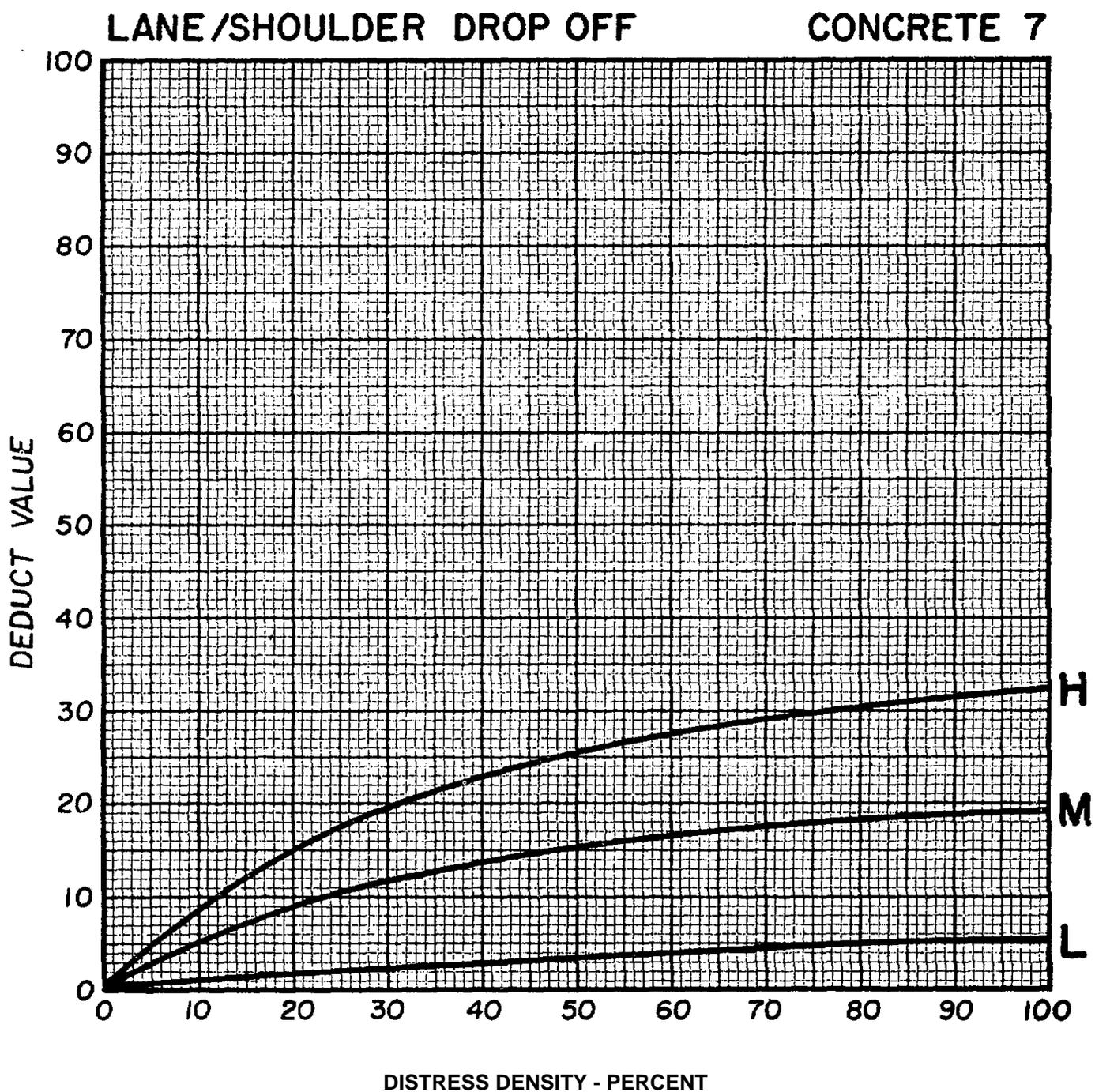


Figure C-27. Deduct value curves for lane/shoulder drop off

**LINEAR CRACKING**

**CONCRETE 8**

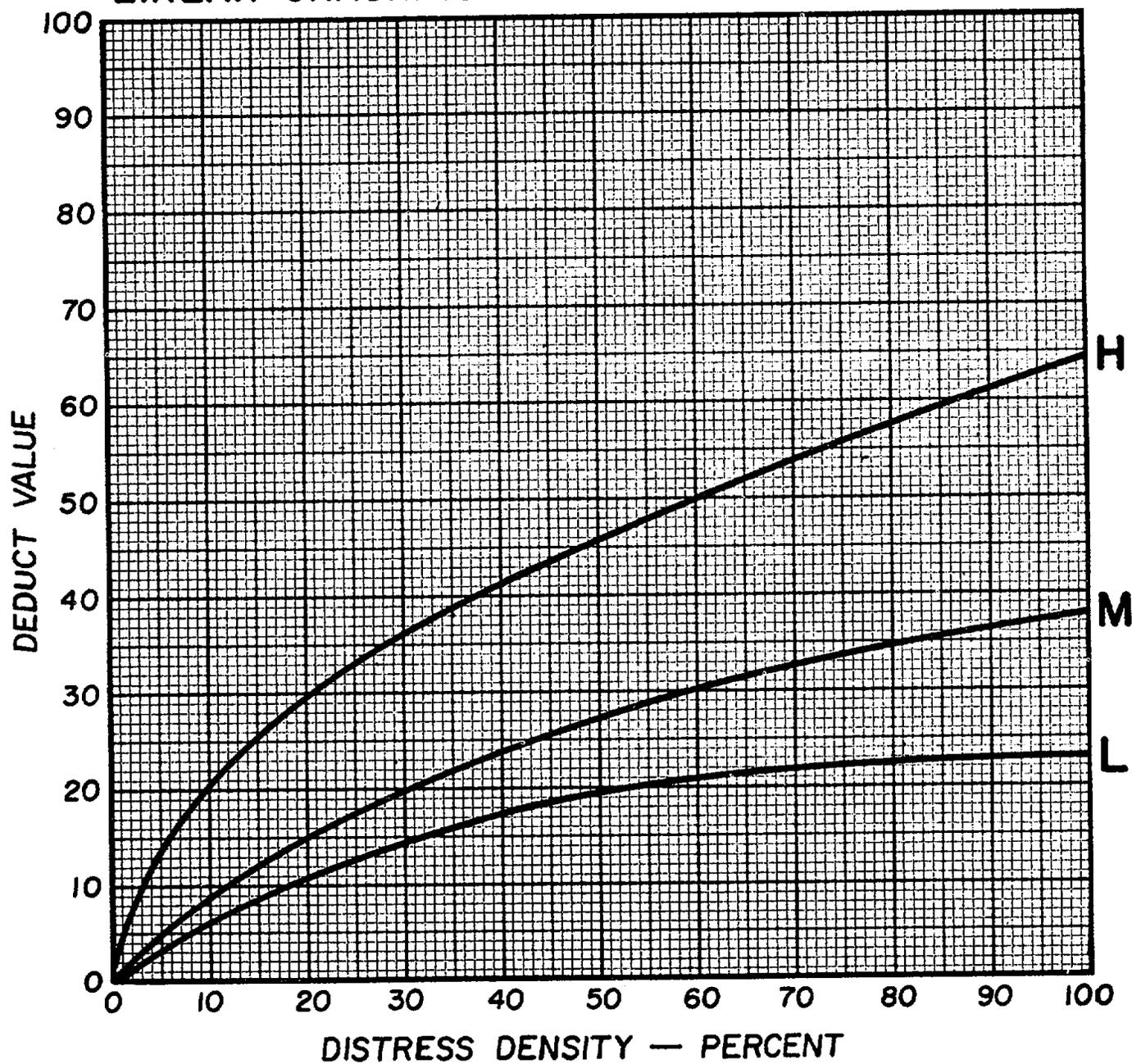


Figure C-28. Deduct value curves for linear cracking.

**PATCHING, LARGE, & UTILITY CUTS CONCRETE 9**

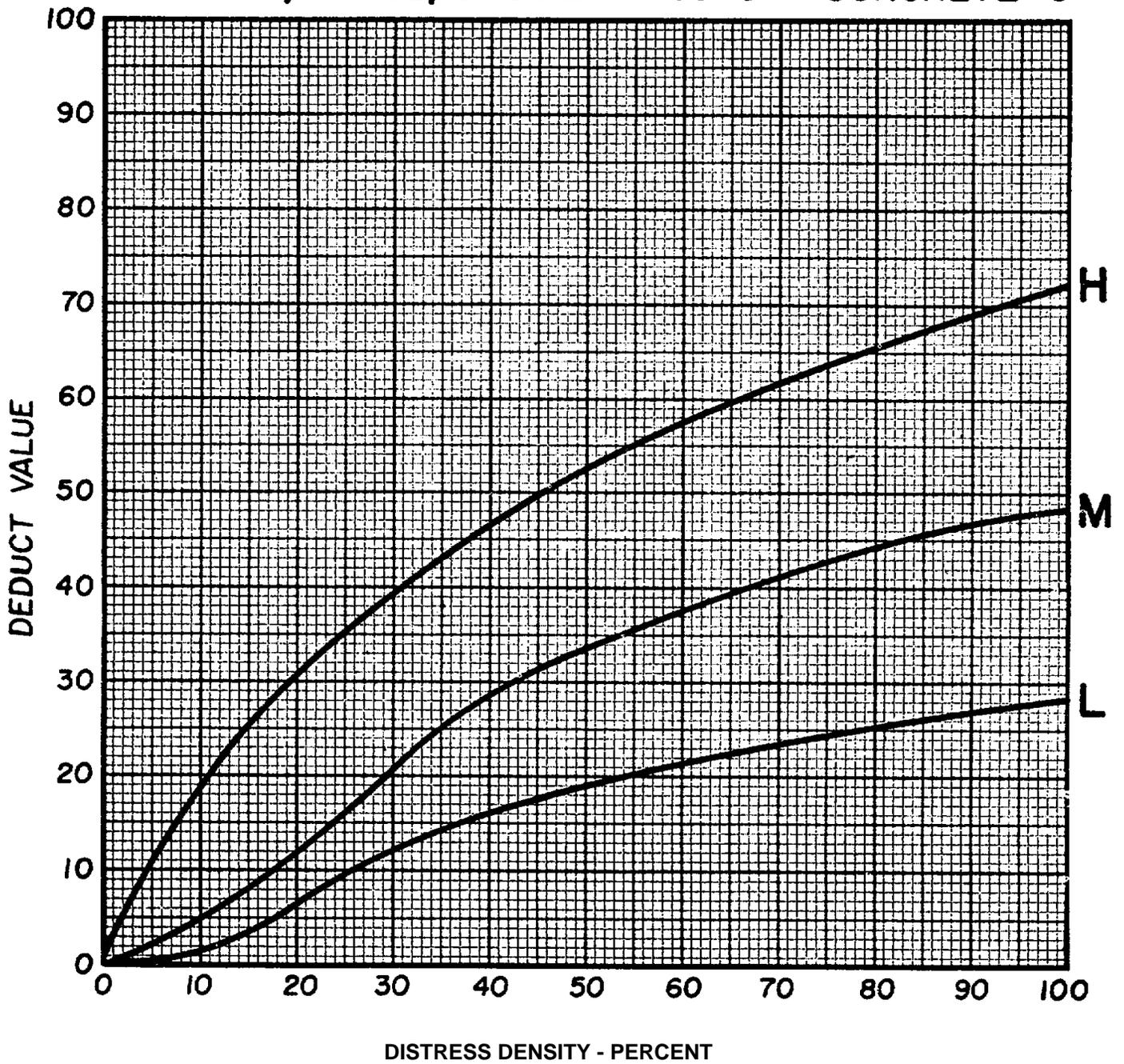


Figure C-29. Deduct value curves for patching large and utility cuts.

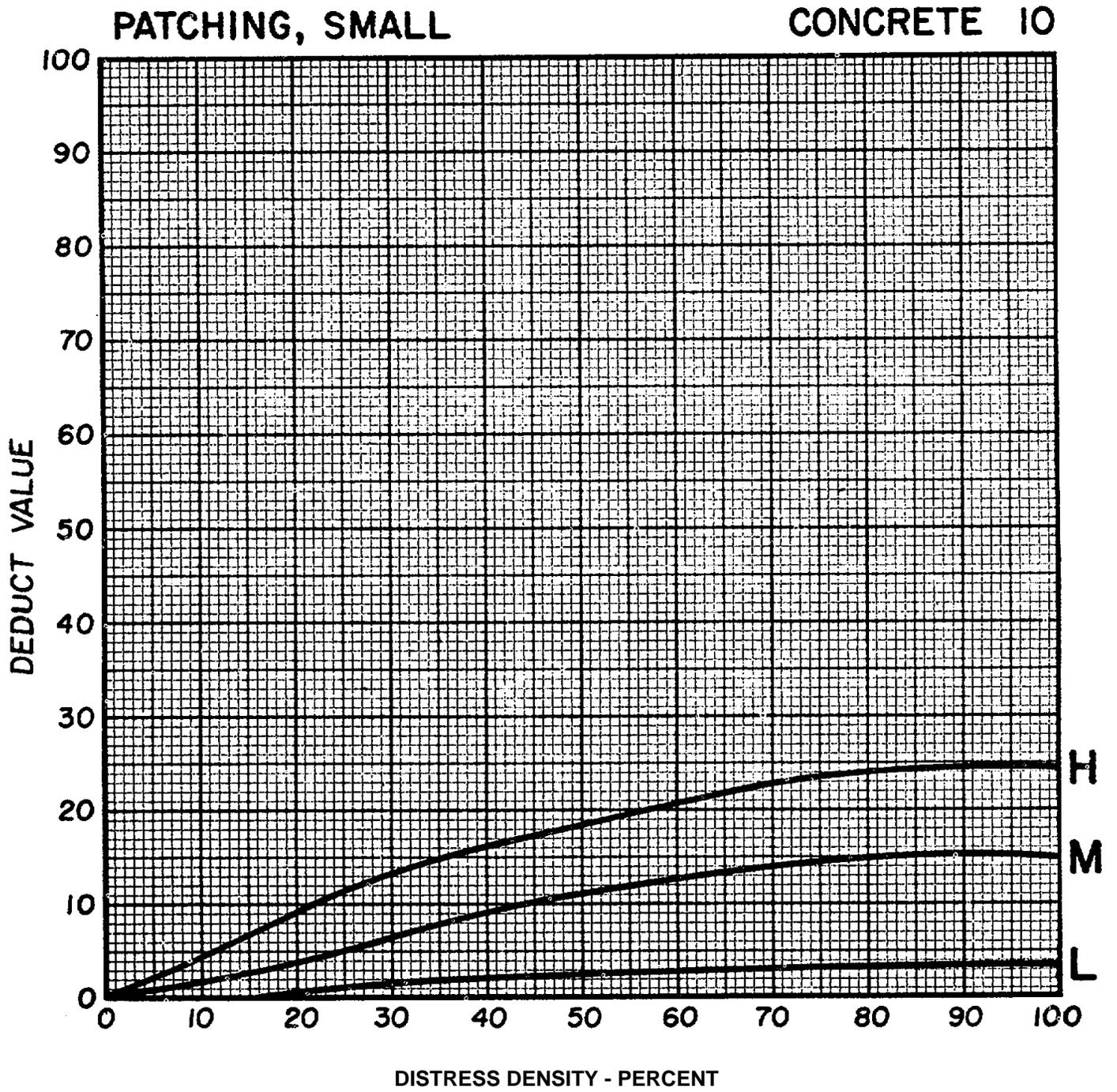


Figure C-30. Deduct value curves for patching small.

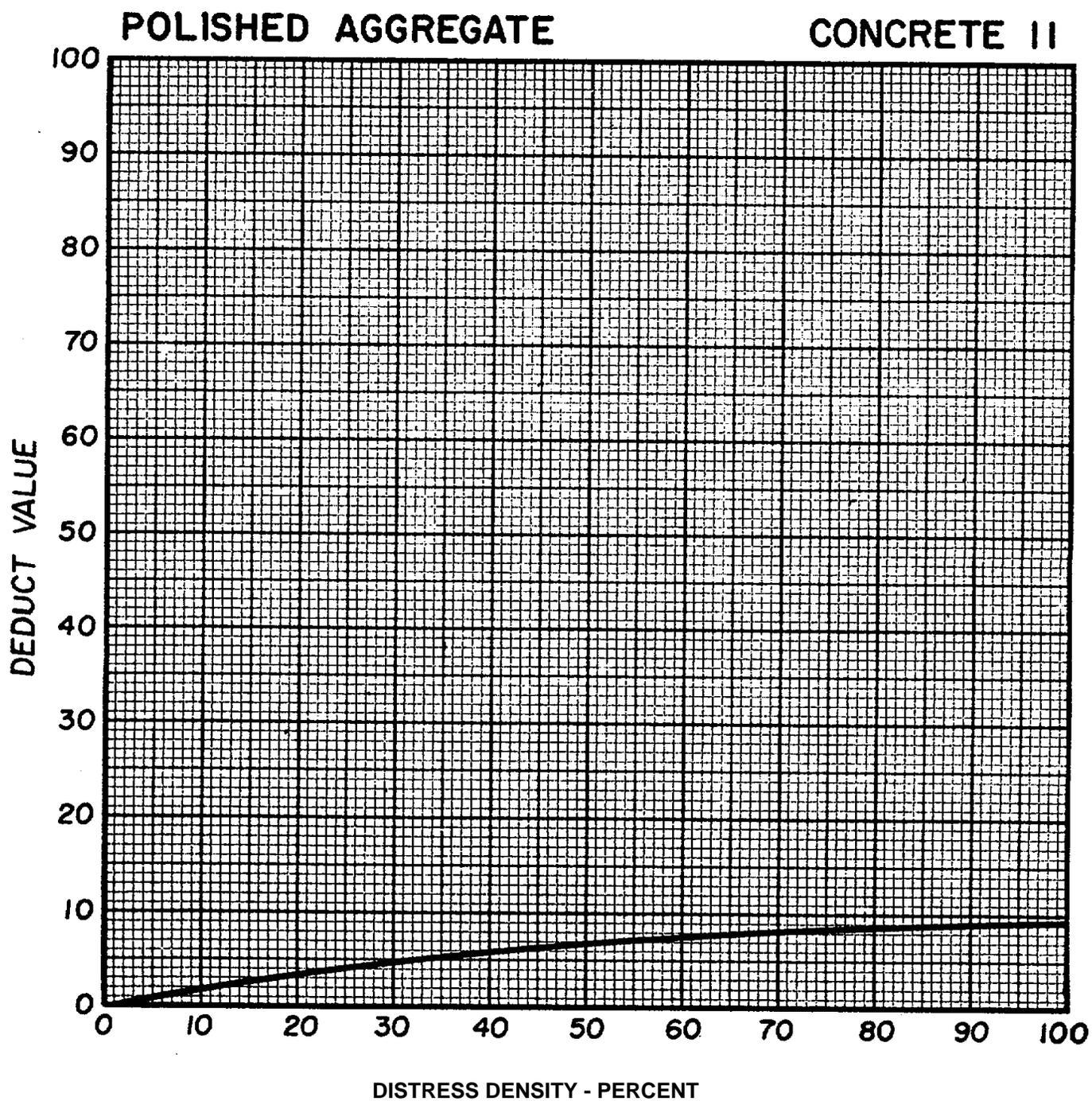


Figure C-31. Deduct value curve for polished aggregate.

# POPOUTS

# CONCRETE 12

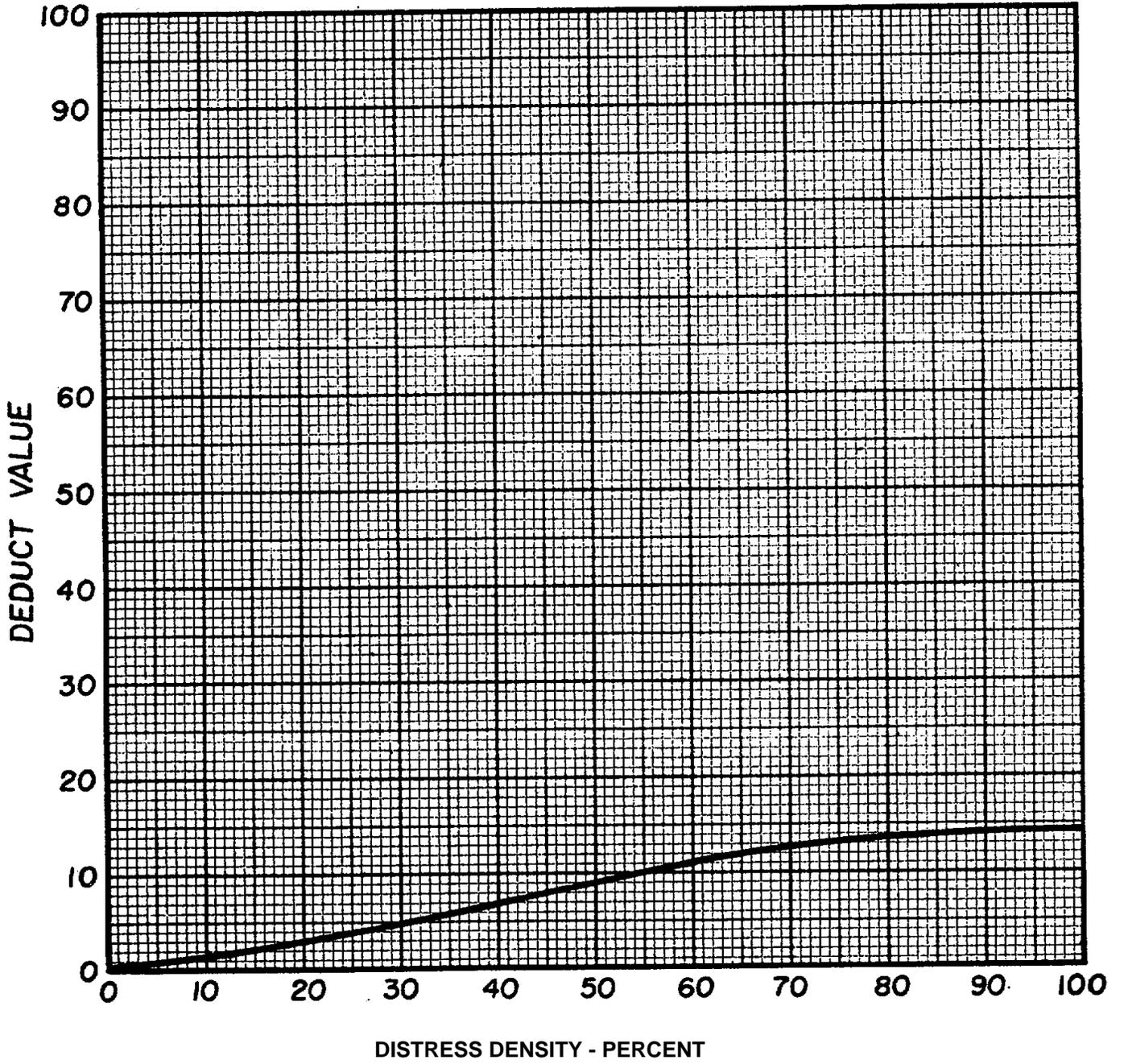


Figure C-32. Deduct value curves for popouts.

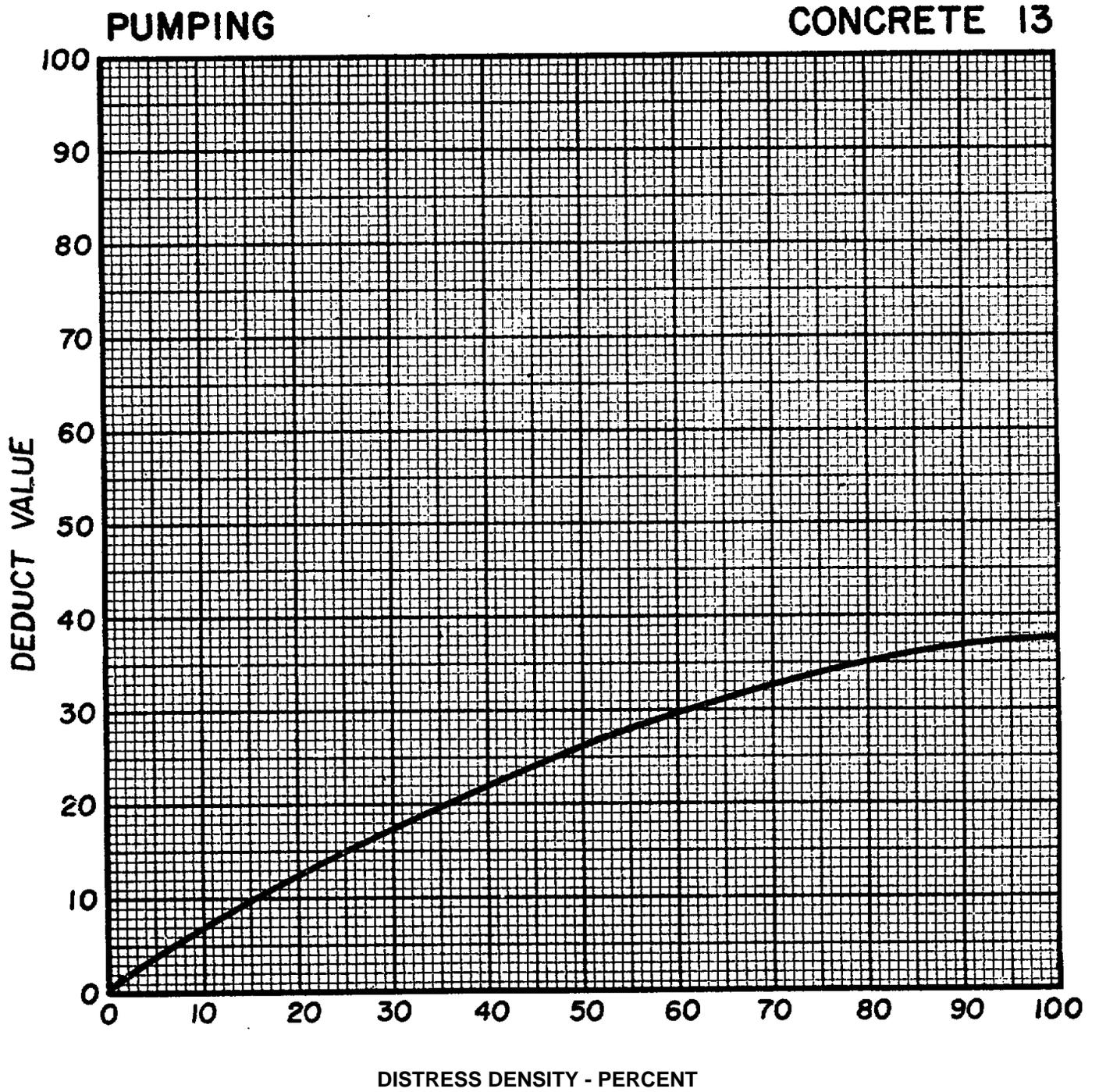


Figure C-33. Deduct value curve for pumping.

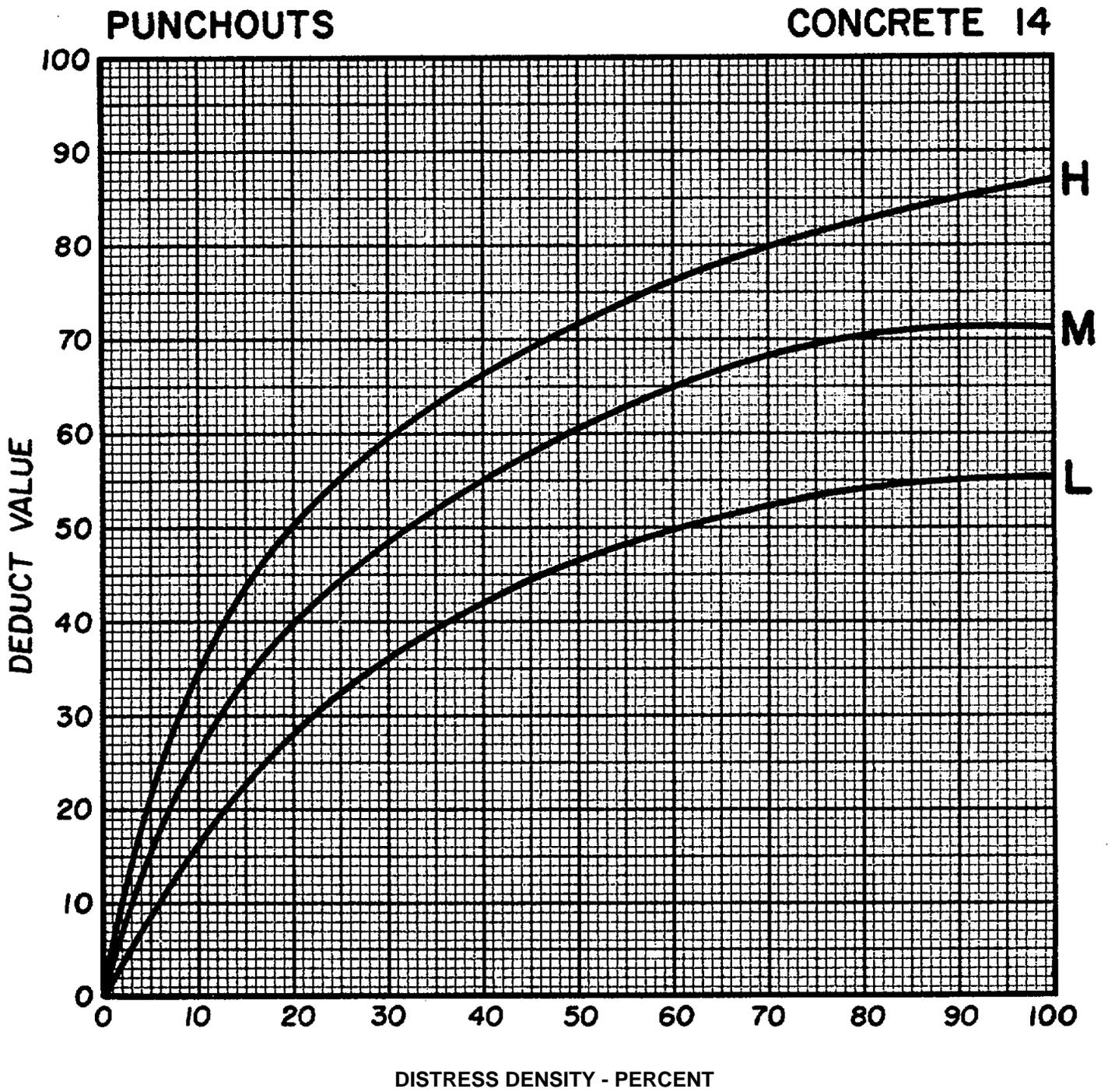


Figure C-34. Deduct value curves for punchouts.

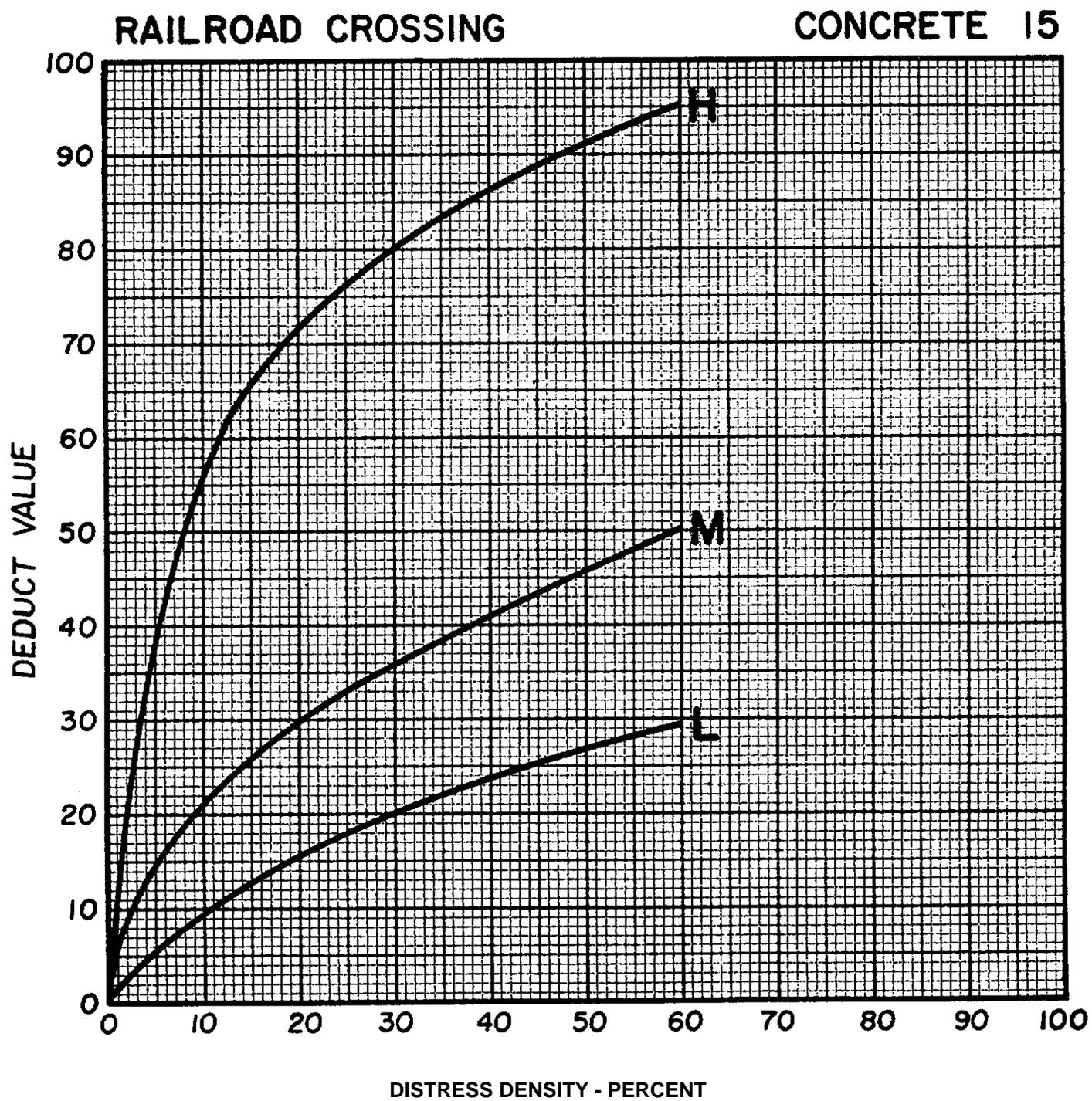


Figure C-35. Deduct value curves for railroad crossing.

SCALING / MAP  
CRACKING / CRAZING

CONCRETE 16

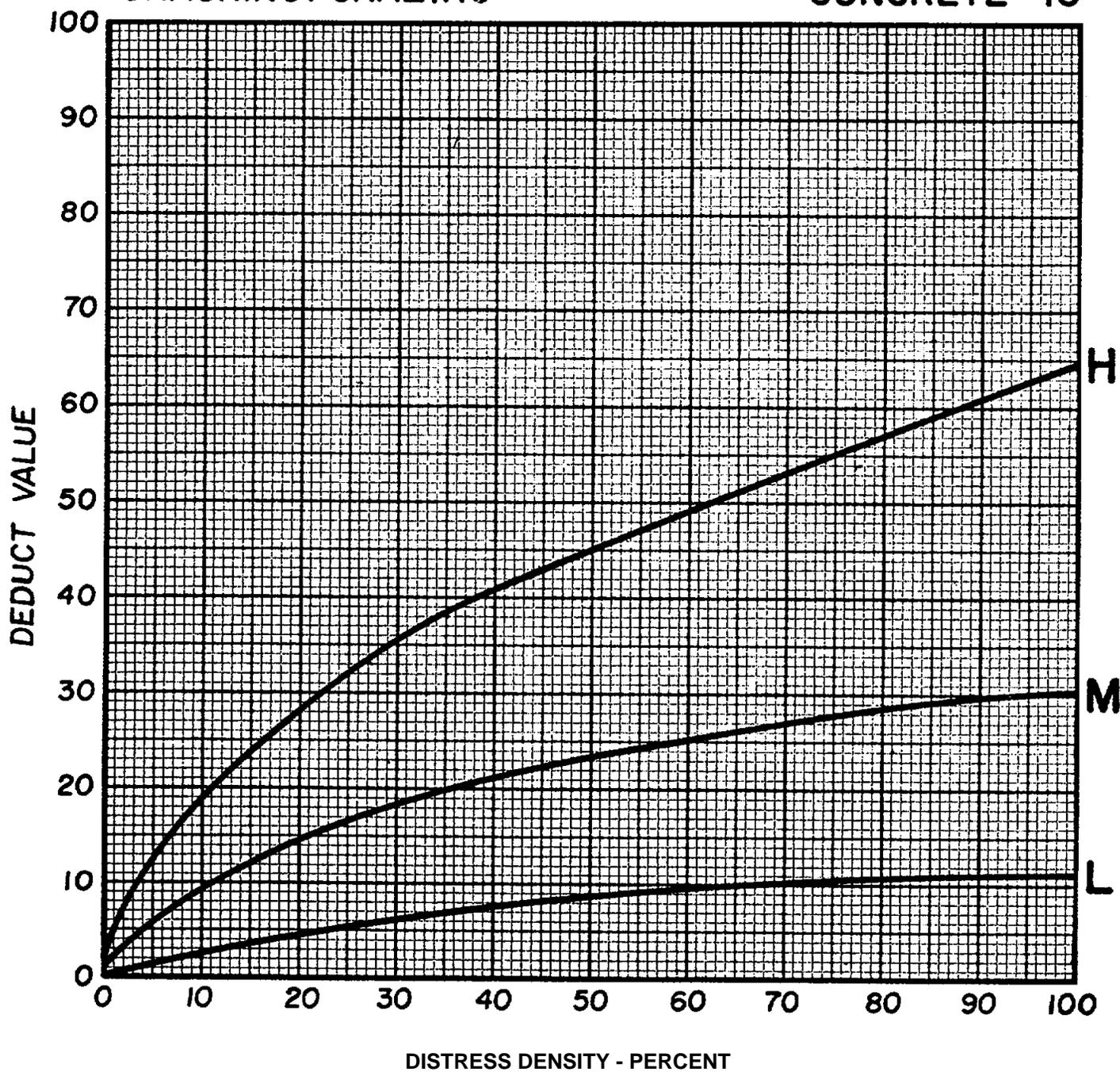


Figure C-36. Deduct value curves for scaling/map cracking/crazing.

# SHRINKAGE CRACKS

# CONCRETE 17

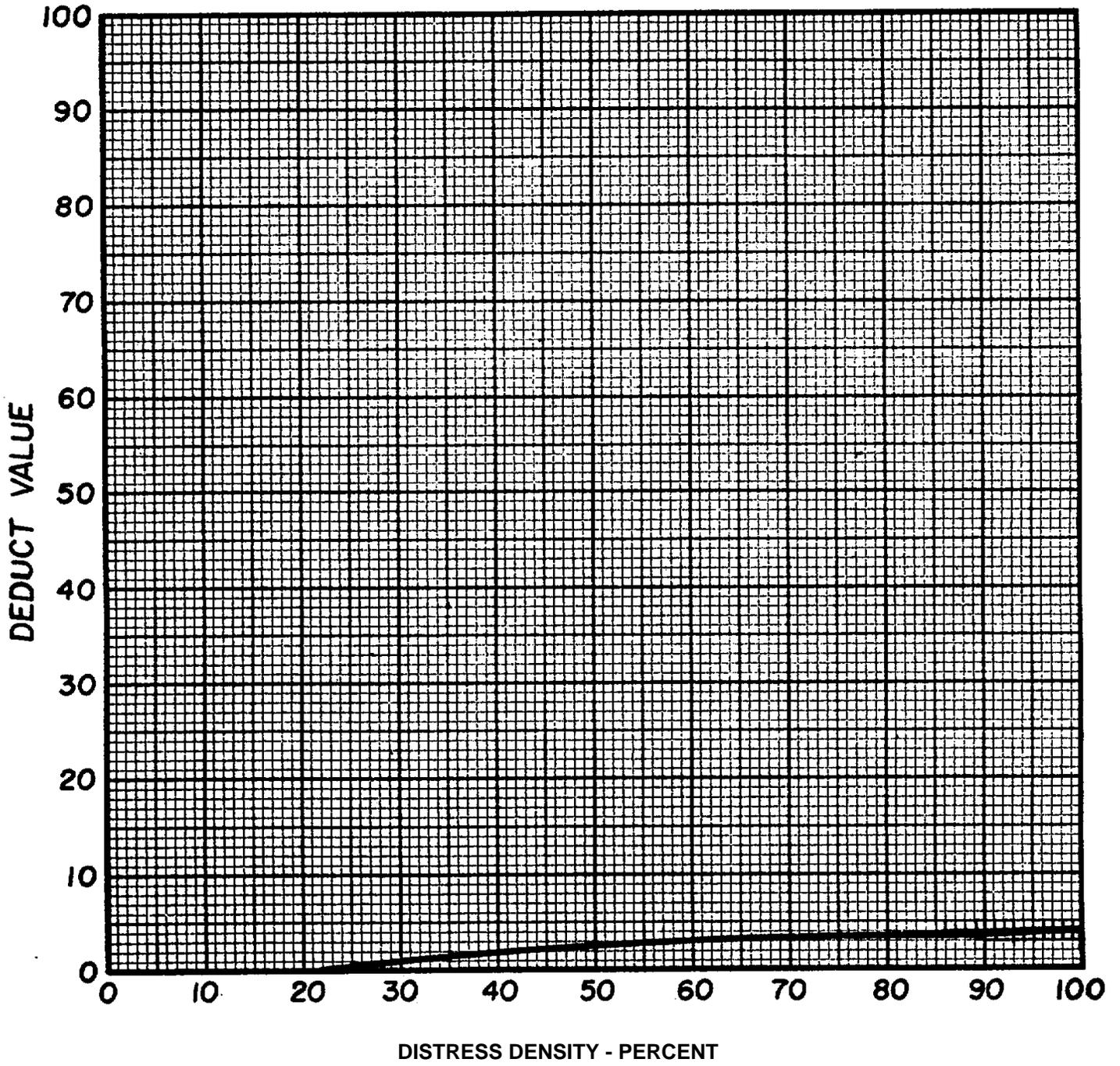


Figure C-37. Deduct value curve for shrinkage cracks.

**SPALLING, CORNER**

**CONCRETE 18**

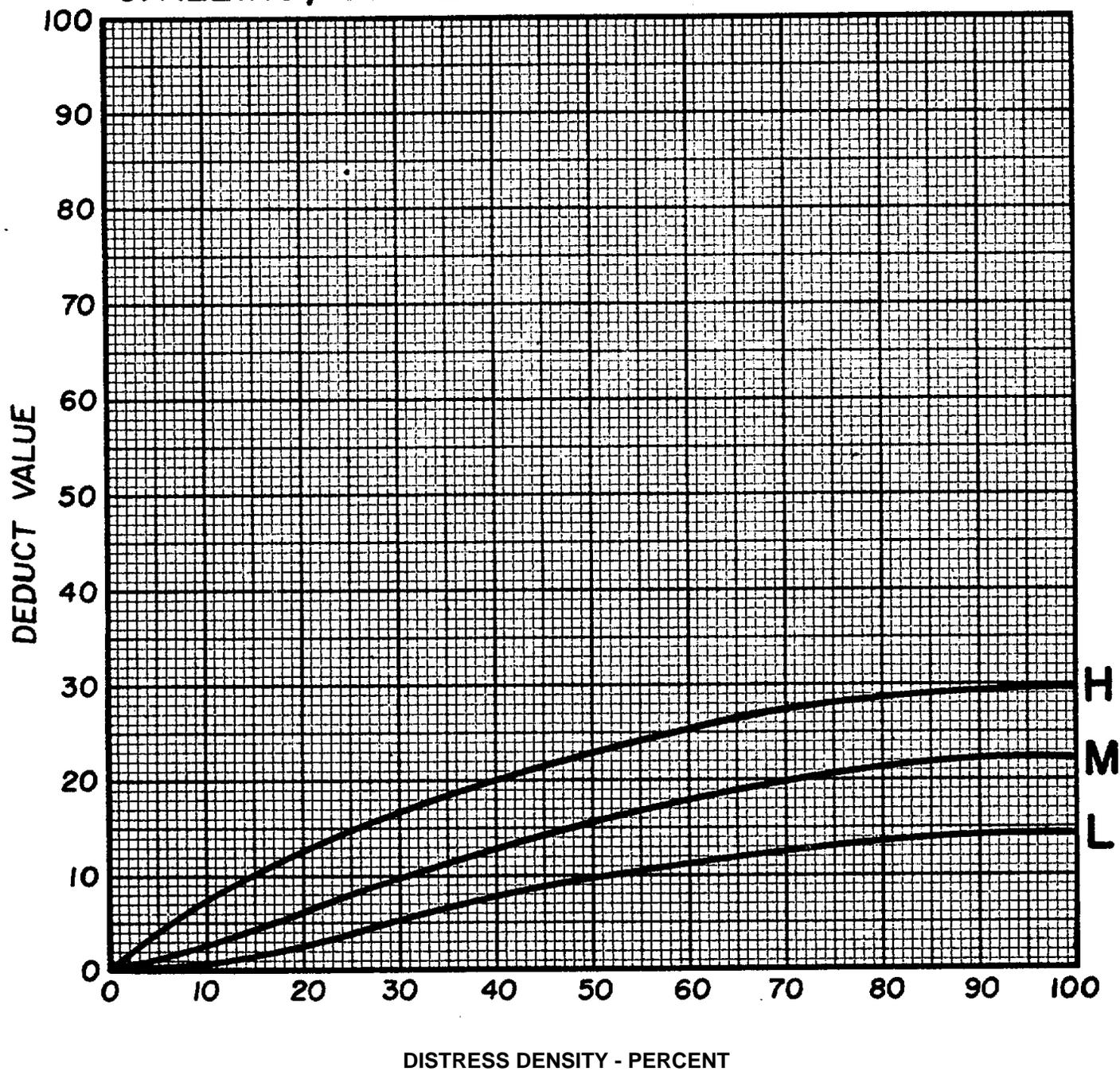


Figure C-38. Deduct value curves for spalling, corner.

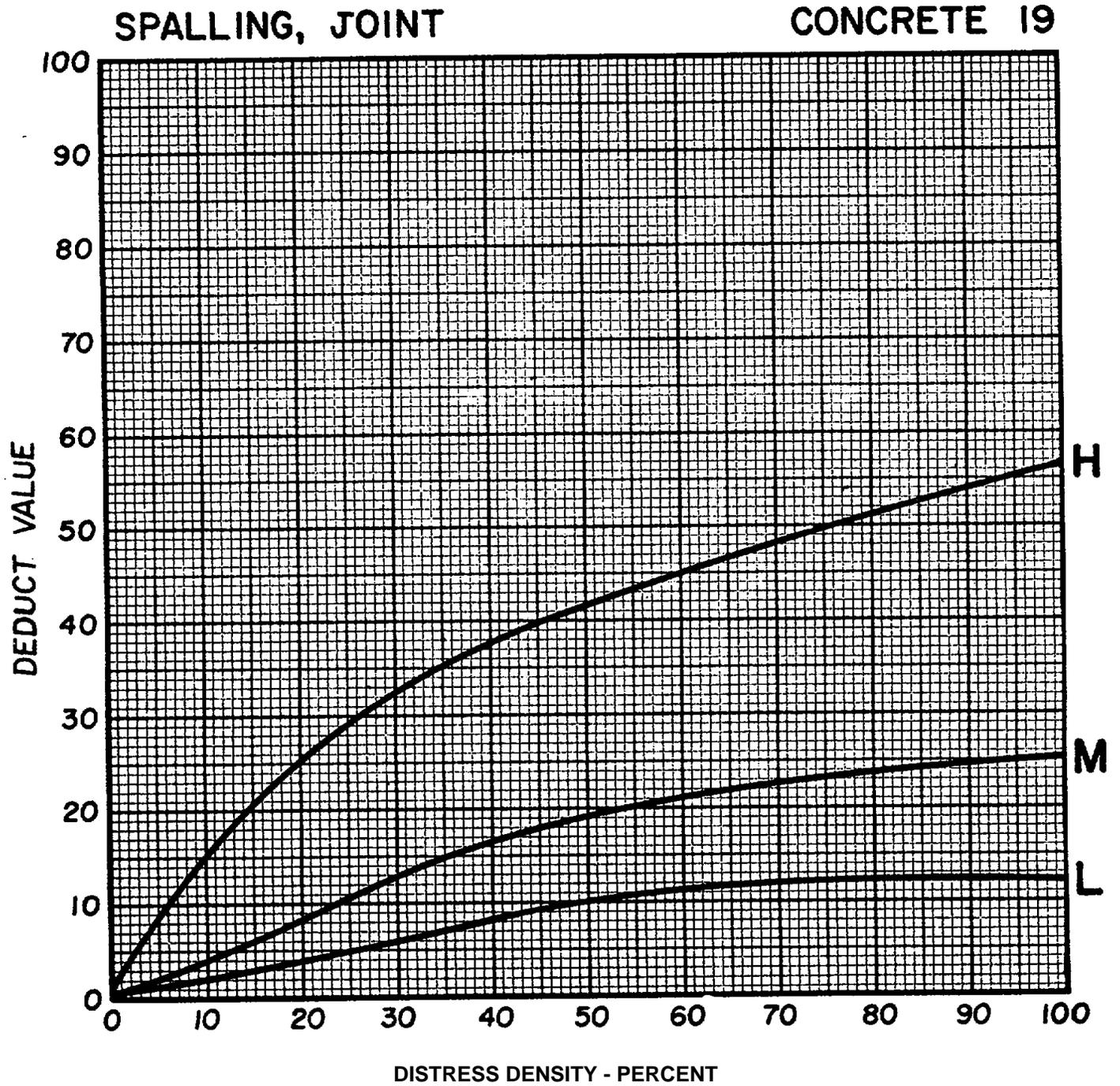


Figure C-39. Deduct value curves for spalling, joint.

# CONCRETE

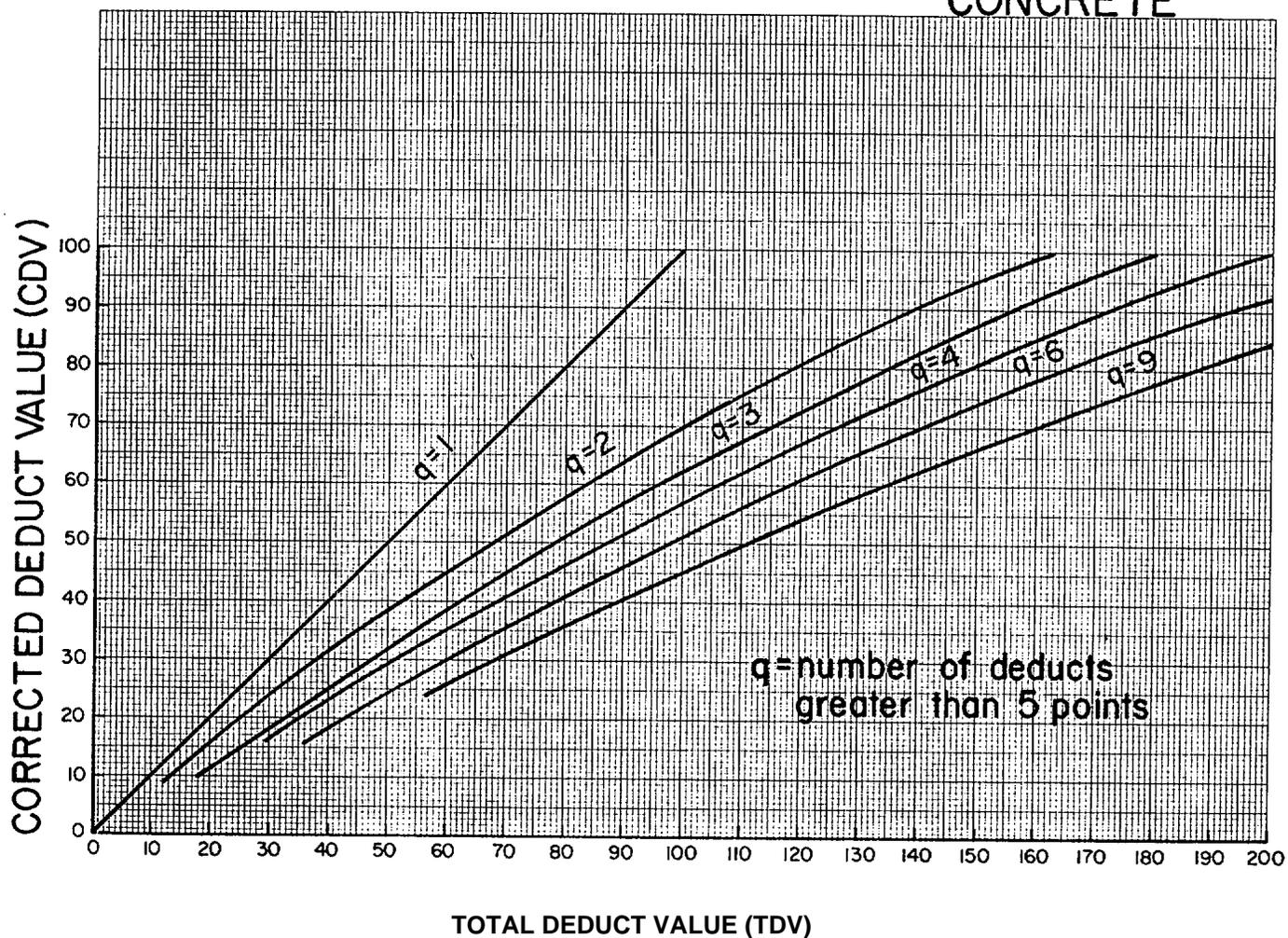


Figure C-40. Corrected deduct value curves for jointed concrete pavements.