

EWP
‘S’-Stirrups-
the only sure
reinforcement for
large diameter,
deep installation
concrete pipe.



Engineered Wire Products, Inc.
800-842-8581

THE NEED FOR STIRRUPS

Large-diameter concrete pipe designed for heavy loading bear compression loads that develop two different types of high stresses – diagonal and radial tension. Diagonal tension on the crown and invert of the pipe causes shear cracks. Radial tension, also at the crown and invert, results in slabbing on the interior of the pipe.

‘S’-stirrup reinforcement prevents pipe failure due to diagonal shear and radial tension.

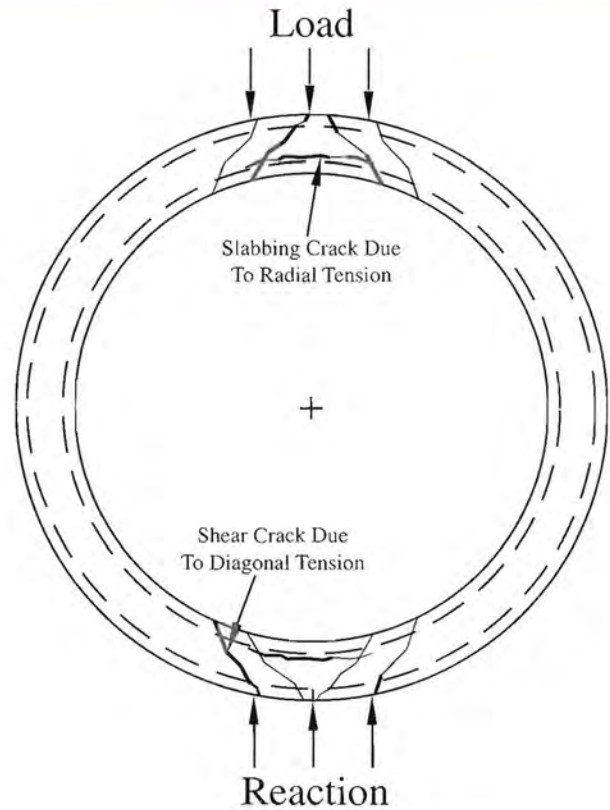


Fig. 1



Installation of large-diameter concrete pipe

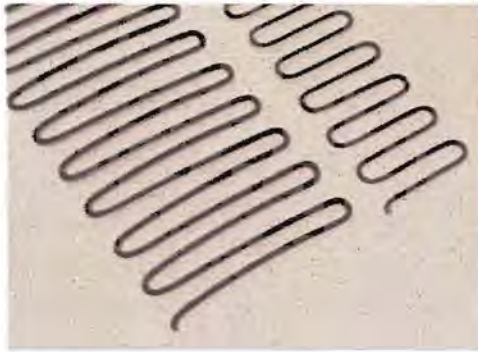
‘S’-STIRRUPS CONTROL THE EFFECTS OF DIAGONAL AND RADIAL TENSION

Shear reinforcement in the form of ‘S’-stirrups is the only sure way to control the effects of diagonal shear and radial tension at the crown and invert of a concrete pipe. Each stirrup is a continuous wire that wraps around the inside circumferential wires, passes through the tension zone, and is anchored by looping within the compression zone. Potential shear cracks are intercepted, and the inside cage is anchored thus controlling slabbing from radial tension.

EWP 'S'-STIRRUPS AND 'S'-STIRRUP ASSEMBLIES



'S'-stirrup assembly



'S'-stirrups

EWP 'S'-Stirrups are available in single lines or in multiple-line assemblies. They may be welded or wire tied in place.

Multiple-line assemblies combine the advantages of precise spacing and ease of placement.

An advantage of the continuous ASTM A82 wire of the 'S'-stirrup is that pipe integrity is not dependent upon cross wire weld shear.

Assemblies nest well for shipping, and there is no tangling from hooks or protrusions when separating the assemblies for installation.

PIPE DESIGNS

ASTM C76 provides design tables for most reinforced concrete pipe sizes used for sewers and culverts. However, there are some sizes and strength classes for which ASTM C76 does not have designs. Ranges of sizes and classes that do not have designs are:

- Class III - Sizes 144" and larger
- Class IV - Sizes 78" and larger
- Class V - Sizes 54" and larger

Section 7.2, "Modified and Special Designs," in ASTM C76 permits the submittal of pipe designs and loads beyond those given in the design tables of C76, as does ASTM C655. Engineered Wire Products, Inc. assumes no liability for the adequacy of these designs.



Handling of a concrete pipe at a pipe plant

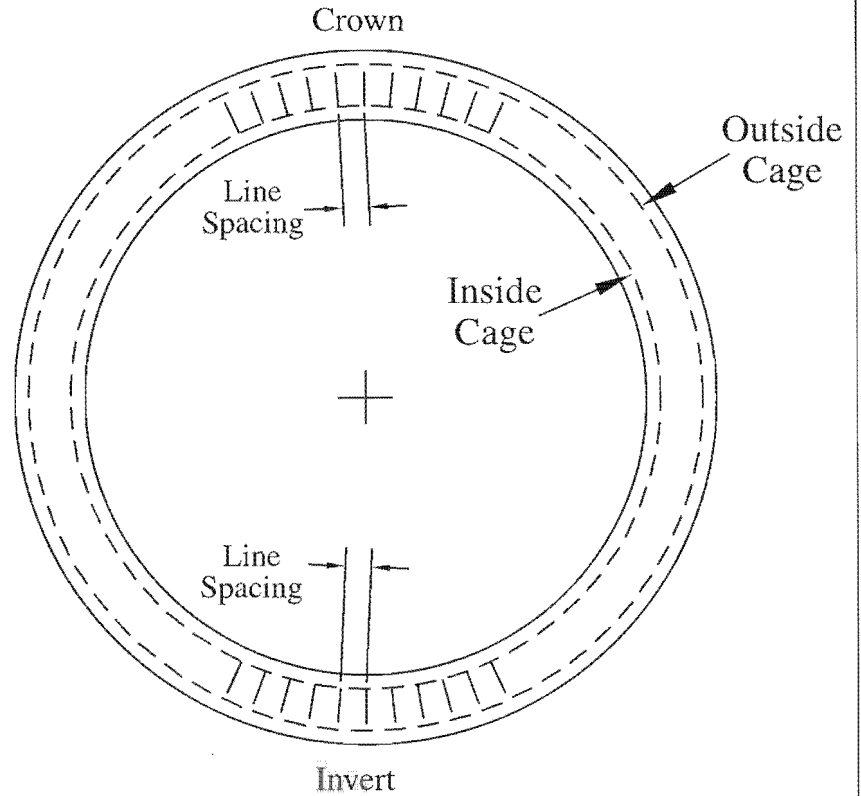
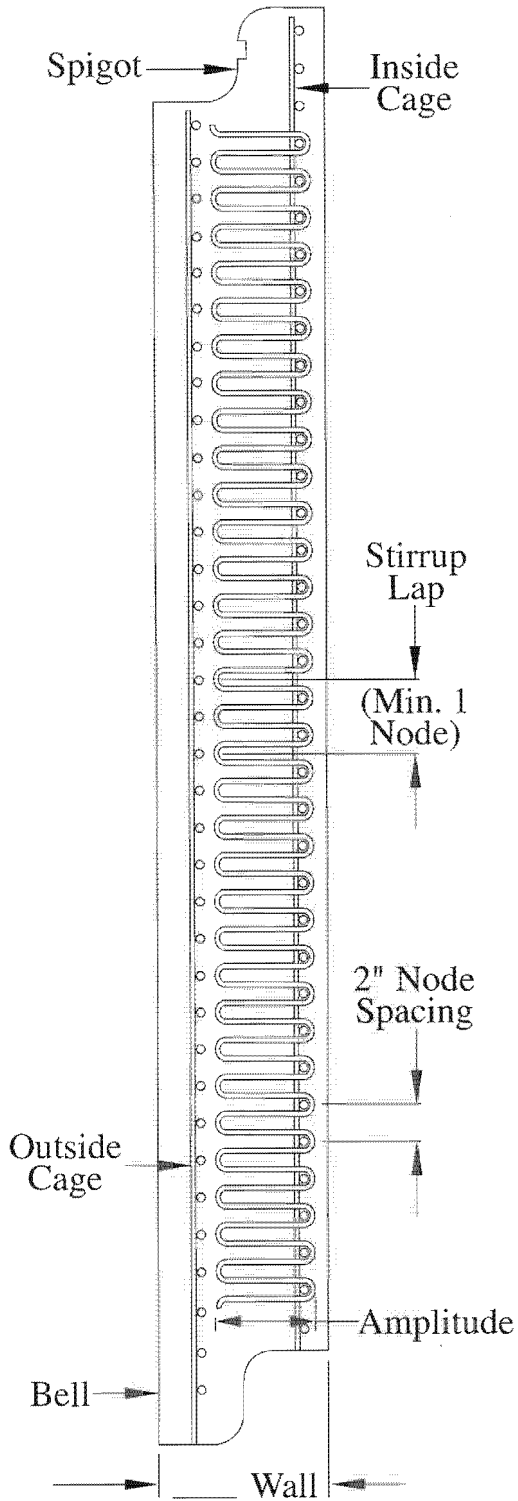
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DIA:	
WALL:	
CLASS:	
CONCRETE:	
COVER:	
DESIGN SPEC:	
PCS:	LENGTH:

'S'-STIRRUPS REQUIRED

	CROWN	INVERT
AREA REQ'D:		
AMPLITUDE:		
WIRE:		
NODES:		
LINES:		
SPACING:		
ASSEMBLIES:		



CUSTOMER:	LOCATION:	
CONTACT:	PHONE:	FAX:
PROJECT:		
DATE:	REP:	