

NOTICE:

To Contractors, Employers

Employees must be instructed in the proper use of Lansas® Products. Proper compliance with all safety rules regarding use are your responsibility. All foreseeable dangers through abuse, misuse, or improper blocking or restraint must be brought to the notice of all end users.

Proper use and care are the total responsibility of the purchaser and user. This sheet may be photocopied for distribution to your employees or anyone else that uses or is around pipe plugs.

Any questions may be directed to Lansas® Corporate Office at: 1.800.452.4902 or 209.334.4115. You may also contact our Eastern Regional Sales Manager in Georgia at: 770.424.1515 or you may contact our Midwestern Regional Sales Manager at: 763.428.9290.

WORLD CLASS SERVICE



WITH A HOME TOWN FEEL

HEAD IN FEET REDUCED TO POUNDS PER SQUARE INCH

Converting Head Feet of Water to Pounds Per Square Inch (PSI)

HEAD FEET	PSI	HEAD FEET	PSI
1	0.43	11	4.73
2	0.87	12	5.20
3	1.30	13	5.63
4	1.73	14	6.05
5	2.16	15	6.49
6	2.60	16	6.93
7	3.03	17	7.36
8	3.46	18	7.79
9	3.90	19	8.23
10	4.33	20	8.66

How much force are you working with? How to calculate the force on a pipe plug:

1. Determine the inside diameter of the pipeline in inches
2. Determine the maximum back or test pressure that will be applied to the pipe plug
3. Calculate the pipe area in square inches:
 $\pi r^2 =$ pipe area in square inches, where $r =$ radius (half the pipe diameter), $\pi = 3.142$
4. Calculate the force the plug must withstand
Example: 36" inside diameter pipe:
 $18" \times 18" \times 3.142 \times 5\text{psi} = 5,090$ pounds of force.

Calculating the pounds of force the plug will face illustrates the tremendous forces that can be generated by an air test or any back pressure on a pipe plug. Being aware of this force will aid in the building of a containment system and bracing/blocking devices when pipe plugs are used.

Please remember that pressure is pressure regardless of source and that pounds per square inch in all liquid mediums such as air or water create the same forces on the surface of a plug or testing device.

Lansas® PRODUCTS

MANUFACTURED BY VANDERLANS & SONS, INC.
1320 S. SACRAMENTO ST. LODI, CA 95240
209-334-4115 • FAX 209-339-8260

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Lansas® PRODUCTS

SAFETY INSTRUCTIONS FOR THE PROPER USE OF PNEUMATIC PIPE PLUGS

"SAFETY FIRST"

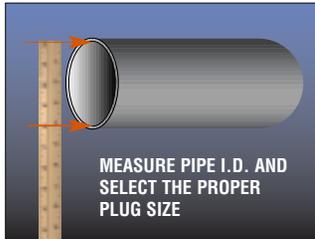
NOTE:

This safety sheet must
be read prior to using
Lansas® Products.

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1. Determine the type, size, and pressure requirements of the plug you will need to perform your job. Each pipe opening must be measured to accurately determine its size. Also, check the access to the line and confirm that the plug you are considering will fit.



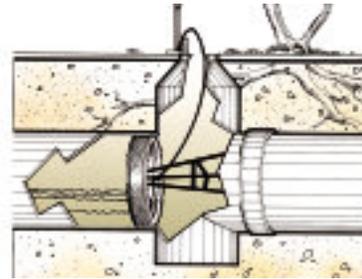
2. Use pneumatic plugs only in pipe sizes for which they were designed. Lansas® Products manufactures both single and multi-size pipe plugs. These plugs are made to fit a pipe I.D. of $\frac{1}{4}$ " (.25 inches) over its nominal size... Example: An 8" pipe plug will have a maximum usage range of $8\frac{1}{4}$ " (8.25 inches). A 6"-10" multi-size plug will have a maximum usage range of $10\frac{1}{4}$ " (10.25 inches). Never exceed these limits. If you are not sure what size pipe your plug will fit, do not use it and consult a supervisor or dealer. Petroleum and some chemical products can cause plugs to rupture. If the contents in the pipeline are in question, please consult your supervisor, dealer, or the factory. Lansas® manufactures plugs designed specifically for chemical applications. Always wear protective equipment such as, but not limited to, hard hat, safety glasses, gloves, ear plugs, etc., when working with pneumatic plugs.

3. Inflating plugs to the required pressure is critical to preventing dislodging (due to under-inflation) or plug rupture (due to over-inflation). Never use a pneumatic plug without knowing the proper inflation pressure and back-test pressure. Never inflate plugs outside of a pipe. Never inflate plugs over a lateral or other openings in the pipe wall. Always insert the plug completely into the pipe plus the equivalent of one pipe diameter. Never inflate plugs over sharp objects – clean the pipe prior to installing the plug.

4. Back or test pressures higher than the maximum rating for the plug may cause the plug to become dislodged. Never use a pneumatic plug without knowing the proper inflation pressure and back-test pressure.

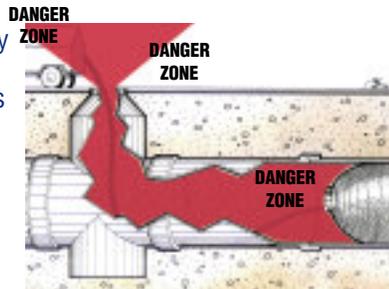
5. Blocking/bracing must be used to prevent the movement or complete dislodging of pipe plugs. This blocking or bracing should be designed to contain a dislodged plug and all materials behind the plug

should the plug fail. Use a certified engineer for the design, construction and maintenance of a containment system. Rubber eyelets, steel rings or metal eyes are not to be used in restraining pipe plugs. These eyelets, rings and metal eyes are designed only for lifting and lowering of the plug.



Note: Our pneumatic plugs are rated for use in a clean, dry pipe. Foreign materials such as algae, mold, sand, oil, grease, etc., may significantly reduce the ability of a plug to hold back the maximum back/test pressure for which the plug is rated. Consult your supervisor when these conditions exist – **ALWAYS** block the plug to prevent dislodging.

6. Always stay out of the "DANGER ZONE." This is the area that is around a pipeline containing a plug. If there is a plug or system failure of any kind, we believe that you or anyone else in the DANGER ZONE will suffer serious bodily injury or death! The "DANGER ZONE" is the area within or around a pipe or manhole where a plug is installed. The "DANGER ZONE" is a cone shaped area, getting larger as it extends away from a pipe or manhole. Surrounding obstacles may affect the "DANGER ZONE" by ricocheting accidentally discharged materials.



7. Use of a properly calibrated gauge is required for the continuous monitoring of inflation pressures and back/test pressure.



8. Never deflate a pneumatic plug until all remaining back/test pressure has been relieved.

9. Lansas® recommends the use of extension hoses and polylift rope/inflation lines. Be sure you are

using a length that allows you to stay clear of the "DANGER ZONE" while pneumatic plugs are in use. Check all fittings and connections of the plug extension hose, hand pump, compressor, valves, etc., for conditions that may cause the leakage of air.

Due to the high quality of the materials we use and the patented designs we work with, our pipe plugs can be repaired.



However, they can only be safely repaired by Lansas®. Never attempt to repair it yourself and never take it to anyone else to have it done. Never attempt to modify Lansas® plugs in any way other than modifications approved by Lansas®.

An inherent danger exists with all inflatable products. If any conditions with this equipment exist that may jeopardize the safety of yourself, your co-workers or others, do not use it. When questions arise, contact your supervisor or safety director for instruction. Failure to comply with these safety instructions, or those of O.S.H.A., the Federal, State and local governments, may result in property damage, serious bodily injury or death.

10. Clean (using water and a mild detergent) and inspect pneumatic plugs before and after each use. Dry thoroughly before using or storing. Check plugs for damaged rubber, i.e., cracks, tears, cuts, punctures, abrasions, etc., loose or damaged fittings, cracks in castings and excessive wear. If questionable conditions exist, do not use the plug and consult a supervisor.

Lansas® has safety videos in English and Spanish. These videos are available free of charge. A copy of these safety instructions is also available in Spanish.

**PLEASE
REMEMBER...
SAFETY FIRST**