Trench Shield #15

CERTIFICATION

Certified Engineer's Statement: This hereby certifies that the Trench Box has been designed in accordance with the requirements and guidelines promulgated by the Occupational Safety and Health Administration (OSHA) [Construction Standard for Excavations [29 CFR Part 1926.650-.652] Subpart B].

Michael J. Vanetta, P.E.
Ohio Registration # E-46015
Vanetta Engineering

Manufacturer's Statement: Kundel Industries Inc. hereby certifies all materials and processes involved in every stage of the production of each and every Trench Box strictly and stringently follow every material production, and design specification put forth by Vanetta Engineering (Michael Vaneeta, P.E.) to ensure that each Trench Box is in full accordance with the requirements and guidelines promulgated by the Occupational Safety And Health Administration.

Robert Kundel, President
Kundel Industries

SERIAL NO:	3090
BOX STYLE:	TITAN 3 LITE
DIMENSIONS:	8' x 8'

If any questions or problems should arise, please do not hesitate to call us at (216) 395-3948

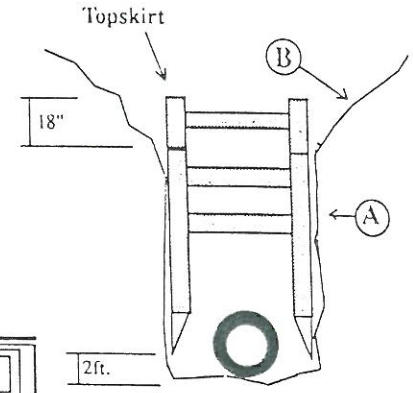
Brooks Tractor

8-15-94

AUG 15 1994

TITAN 3 LITE
Manufacturer's Recommendations for Use

1. The trench box must fit snugly into the trench. Example "A".
2. Protection must be provided against any spoil falling into the trench box, Example "B".
3. O.S.H.A. Regulations are to be observed at all times.
4. All other applicable regulations are to be observed. (city,state,etc...)
5. Designed working load may not be exceeded.
6. Observe Tabulated Data soil description and slope figures for determinations of adjusted depth.
7. A damaged box or components may not be used.
8. The trench boxes may only be used by a competent person as outlined in O.S.H.A.'s Trench Safety Rules. (Ex. The Final Rule)
9. To determine the side wall pressure, use the soil type chart and pressure/depth graph."
10. Repairs are to be made only by a KUNDEL Ind. representative.
11. All components must be completely and properly assembled.
12. Please note that all tables and notes are for illustrative puposes only. The tables are based upon static load conditions and assumed soil pressures. Safe depths can vary from design assumptions. Please refer to all manufacturer's usage instructions, consult a qualified engineer, or contact KUNDEL Ind. technical support line.
13. It is the contractor's responsibility to maintain the working area within the Trench System free of water for hydrostatic and sub soil conditions.
14. KUNDEL Trench products are designed and built to function as soil support systems and to protect workers.



Example type "B" Soil

Box Dimensions	8' x 8'
Serial Number	3090
Lbs. per sq.ft.	1500
w/ 7 pipe sys.	N/A
w/ clear to rear	N/A
"A" Soil	57'
w/ 7 pipe sys.	N/A
w/ clear to rear	N/A
"B" Soil	33'
w/ 7 pipe sys.	N/A
w/ clear to rear	N/A
"C" Soil	25'
w/ 7 pipe sys.	N/A
w/ clear to rear	N/A
Muck	18'
w/ 7 pipe sys.	N/A
w/ clear to rear	N/A

SOIL DESCRIPTIONS

Type A SOIL means:
Cohesive soils with an unconfirmed compressive strength of 1.5 ton per sq. ft.(tsf) (144kPa) or greater. Examples of cohesive soils are: clay,silty clay, sandy clay, clay loam and, in some cases, silty clay loam, sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. However, no soil is type A if:
(i) The soil is fissured; or
(ii) The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or
(iii) The soil has been previously disturbed; or
(iv) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or
(v) The material is subject to other factors that would require it to be classified as a less stable material.
TYPE B means:
(i) Cohesive soil with an unconfirmed compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa) ; or
(ii) Granular cohesionless solid including; angular gravel (similar to crushed rock), silt, silt loam and sandy loam and, in some cases,silty clay loam and sandy clay loam.
(iii) Previously disturbed soils except those which would otherwise be classified as Type "C" Soil.
(iv) Soil that meets unconfirmed compressive strength or cementation requirements for Type "A", but is fissured or subject to vibration; or
(v) Dry rock that is not stable; or
(vi) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4h kPa), but only if the material would otherwise be classified as Type "B".
TYPE C means:
(i) Cohesive soil with an unconfirmed compressive strength of 0.5 tsf (48 kPa) or less; or
(ii) Granular soils including gravel, sand, and loamy sand; or
(iii) Submerged soil or soil that water is freely seeping; or
(iv) Submerged rock that is not stable; or
(v) Material in a sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H:1V) or steeper.
MUCK: The "MUCK" soil designation found on the chart on other KUNDEL literature is intended to describe those special soil situations where the pressure is higher than the standardized "C" designation. It is not an exact or official soil designation with exact or specific parameters! It is present only because there are situations where the pressure is higher than "C", and to provide a guide line for using KUNDEL Trench Products in those special situations.