

May 18 03 11:08a  
OCT- 1-98 TUE 18:33

Kenko Inc

2096674835

P.2

Trench Shield #42 P.05  
Used at Ritchie Bros. 2004 Auction

LITTLE ROCK

25/01



1360 Livingstone Road, Hudson, Wisconsin 54016  
(715) 366-2930 • Toll Free: 1-800-242-2930 • Fax: (715) 366-5189

MANUFACTURERS TABULATED DATA

SPECIFICATIONS:

46-416A

MODEL: 543 - 416  
SERIAL NUMBER: 92-82  
HEIGHT: 4 FEET  
LENGTH: 16 FEET  
RATED UNIFORM PRESSURE: 529 PSF  
BOTTOM PRESSURE IN C LOADING: 689 PSF

MAXIMUM DEPTH OF TRENCH:  
GRADIENT STRAIGHT TRENCH SLOPED TRENCH  
TYPE A LOADS: 25 PSF/FT 20.3 FEET 20.0 FEET  
TYPE B LOADS: 45 PSF/FT 12.2 FEET 20.0 FEET  
TYPE C LOADS: 80 PSF/FT 7.7 FEET 20.0 FEET  
TYPE C LOADS: 60 PSF/FT 10.8 FEET

DEFLECTION AT MAXIMUM LOADING: 2.06 INCH

NOTE: STRAIGHT TRENCH MAY REQUIRE STACKING ADDITIONAL SHIELDS ABOVE THIS SHIELD. SLOPING APPLICATIONS REQUIRE 18" FREEBOARD AND SLOPES PER OSHA 1926 TABLE B-1. SOIL TYPES SHALL BE AS DETERMINED BY A COMPETENT PERSON. ALL SLOPING TRENCHES GREATER THAN 20 FEET IN DEPTH MUST BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER. THE SHIELD MAY BE USED FOR INSTALLATIONS AND UNDER CONDITIONS OTHER THAN THOSE STATED HEREIN IF A REGISTERED PROFESSIONAL ENGINEER HAS DESIGNED SUCH ALTERNATE. DETAILED CALCULATIONS FOR THE DESIGN OF THIS SHIELD ARE ON FILE AT THE OFFICE OF THE MANUFACTURER.

RECOMMENDATIONS:

THIS TRENCH SHIELD IS INTENDED TO BE USED FOR PERSONNEL PROTECTION SYSTEMS IN EXCAVATIONS. THE SHIELD SHALL NOT BE USED IF IT IS STRUCTURALLY DAMAGED. DAMAGE TO THE SHIELD MAY RESULT FROM PUNCTURING THE SKIN OR DRIVING THE SHIELD INTO THE SOIL.

CERTIFICATION:

I HEREBY CERTIFY THAT THIS DESIGN WAS PREPARED UNDER MY SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

*Gerardo P. Piller*  
REGISTRATION # 7014

ROW 6	KENKO, INC. 1025 Calimesa Blvd Calimesa, CA 92520	4X16A																											
SERIAL NUMBER: 46-416A	DATE ISSUED: 05/30/03																												
USE NOTES: 1. TRENCH SHIELD TO BE ASSEMBLED AND INSTALLED AS SHOWN AND IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. 2. BANK ABOVE TOP OF SHIELD TO BE LAID BACK ACCORDING TO OSHA REGULATIONS. 3. SOILS YIELDING LATERAL EARTH PRESSURES EXCEEDING THOSE TABULATED REQUIRE VERIFICATION BY A REGISTERED PROFESSIONAL ENGINEER. 4. CONSULT MANUFACTURER WHEN BOTTOM OF SHIELD IS NOT AT TRENCH BOTTOM. 5. KNIFE EDGE EMBEDMENT REQUIRED WHEN SUPPLIED UNLESS NOTED OTHERWISE. 6. KNIFE EDGE EMBEDMENT REQUIRED FOR ALL SHIELD DESIGNS WITH HYDROSTATIC PRESSURE. 7. IF DEWATERING WITH WELLS OR WELL POINTS AND WATER TABLE IS AT OR BELOW TRENCH BOTTOM ADJUST SOILS CLASSIFICATION. 8. ADDITIONAL SHIELDS MAY BE STACKED WITH NO PENALTY IN DEPTH OF CUT. 9. DEPTHS OF CUTS SHOWN ARE BASED ON EXAMPLES OF VARIOUS SOIL CONDITIONS. VERIFY ACTUAL SOIL PRESSURES PRIOR TO EACH USE. 10. ANY MODIFICATIONS OR ALTERATIONS NOT ALLOWED UNLESS APPROVED IN WRITING BY MANUFACTURER OR REGISTERED PROFESSIONAL ENGINEER. 11. THIS TRENCH SHIELD IS INTENDED TO BE USED FOR PERSONNEL PROTECTION SYSTEMS IN EXCAVATIONS. THE SHIELD SHALL NOT BE USED IF IT IS STRUCTURALLY DAMAGED.																													
GRAPHICAL DESCRIPTION: 																													
RATING INFORMATION: <table border="1"><thead><tr><th colspan="3">SHIELD SIZE</th></tr><tr><th>HEIGHT (FEET)</th><th>LENGTH (FEET)</th><th>MAX. LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM (PSF)</th></tr></thead><tbody><tr><td>4</td><td>16</td><td>600</td></tr></tbody></table> <table border="1"><thead><tr><th colspan="3">MAXIMUM ALLOWABLE DEPTH OF CUT (D) (FEET)</th></tr><tr><th colspan="3">SOIL TYPE TO BE EXCAVATED</th></tr></thead><tbody><tr><td>TYPE A MOIST SOIL 25 PSF PER FOOT OF DEPTH</td><td>TYPE B WET MUCKY 300 PSF PER FOOT OF DEPTH</td><td>TYPE C HYDROSTATIC PRESSURE- SATURATED SOIL 80 PSF PER FOOT OF DEPTH</td></tr><tr><td>24.0</td><td>13.0</td><td>7.5</td></tr></tbody></table> <table border="1"><thead><tr><th>DESCRIPTION</th><th>DESCRIPTION</th><th>DESCRIPTION</th></tr></thead><tbody><tr><td>MOIST FINE SAND, SAND-GRAVEL OR CLAY SOILS WITH LIQUID PRESSURE NOT EXCEEDING 25 PSF PER FOOT OF DEPTH</td><td>WET MUCKY CLAY-SILT SOILS WITH LIQUID PRESSURE NOT EXCEEDING 45 PSF PER FOOT OF DEPTH</td><td>SATURATED MUCK, SILT, SAND-GRAVEL OR CLAY SOILS WITH LIQUID PRESSURE NOT EXCEEDING 80 PSF PER FOOT OF DEPTH</td></tr></tbody></table>			SHIELD SIZE			HEIGHT (FEET)	LENGTH (FEET)	MAX. LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM (PSF)	4	16	600	MAXIMUM ALLOWABLE DEPTH OF CUT (D) (FEET)			SOIL TYPE TO BE EXCAVATED			TYPE A MOIST SOIL 25 PSF PER FOOT OF DEPTH	TYPE B WET MUCKY 300 PSF PER FOOT OF DEPTH	TYPE C HYDROSTATIC PRESSURE- SATURATED SOIL 80 PSF PER FOOT OF DEPTH	24.0	13.0	7.5	DESCRIPTION	DESCRIPTION	DESCRIPTION	MOIST FINE SAND, SAND-GRAVEL OR CLAY SOILS WITH LIQUID PRESSURE NOT EXCEEDING 25 PSF PER FOOT OF DEPTH	WET MUCKY CLAY-SILT SOILS WITH LIQUID PRESSURE NOT EXCEEDING 45 PSF PER FOOT OF DEPTH	SATURATED MUCK, SILT, SAND-GRAVEL OR CLAY SOILS WITH LIQUID PRESSURE NOT EXCEEDING 80 PSF PER FOOT OF DEPTH
SHIELD SIZE																													
HEIGHT (FEET)	LENGTH (FEET)	MAX. LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM (PSF)																											
4	16	600																											
MAXIMUM ALLOWABLE DEPTH OF CUT (D) (FEET)																													
SOIL TYPE TO BE EXCAVATED																													
TYPE A MOIST SOIL 25 PSF PER FOOT OF DEPTH	TYPE B WET MUCKY 300 PSF PER FOOT OF DEPTH	TYPE C HYDROSTATIC PRESSURE- SATURATED SOIL 80 PSF PER FOOT OF DEPTH																											
24.0	13.0	7.5																											
DESCRIPTION	DESCRIPTION	DESCRIPTION																											
MOIST FINE SAND, SAND-GRAVEL OR CLAY SOILS WITH LIQUID PRESSURE NOT EXCEEDING 25 PSF PER FOOT OF DEPTH	WET MUCKY CLAY-SILT SOILS WITH LIQUID PRESSURE NOT EXCEEDING 45 PSF PER FOOT OF DEPTH	SATURATED MUCK, SILT, SAND-GRAVEL OR CLAY SOILS WITH LIQUID PRESSURE NOT EXCEEDING 80 PSF PER FOOT OF DEPTH																											
PREPARED BY: <b>PEM</b> PROJECT ENGINEERING & MANAGEMENT, INC. 305 JACOBSON STREET, SUITE 300 SAINT PAUL, MINNESOTA 55101-9715 PHONE: (651) 209-1107 FAX: (651) 209-1168 www.projecteng.com	SHEET TITLE: TRENCH SHIELD CERTIFICATION	LICENSURE: I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. <i>Jeffrey A. Carlson</i> JEFFREY A. CARLSON, P.E. DATE: 05/30/03 REG. NO. 25113																											