

LITHOTEX® PAVECRAFTERS®

PROFESSIONAL GRADE IMPRINTING TOOLS

TECH-DATA BULLETIN T-404.05



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A system of mat-type imprinting tools for texturing freshly placed architectural concrete and SCOFIELD® Texturetop® Stamp Grade toppings.

1. Description and Uses: LITHOTEX® Pavecrafters® Professional Grade Imprinting Tools are a system of matched tools used to transform the surface of freshly placed architectural concrete flatwork and SCOFIELD Texturetop Stamp Grade toppings into patterns that mimic other building materials. By combining the structural strength and wear resistance of concrete with the look of other paving materials, they create natural appearing, low-maintenance, textured surfaces in a wide variety of imprinted patterns.

2. Limitations: For best results LITHOTEX Pavecrafters Professional Grade Imprinting Tools should be used to texture plastic concrete color-hardened with LITHOCHROME® Color Hardener or EMERCHROME® Floor Hardener or to imprint SCOFIELD Texturetop Stamp Grade cementitious toppings.

Producing imprinted architectural concrete requires skill and practice. Choice of imprinting pattern, layout and joint placement, concrete mix design and installation, experience in use of the materials, choice and color of coloring agent(s), color-hardener coverage and application procedures, weather, imprinting texture and techniques, choice and color of bond-breaking materials, use of chemical stains and color combinations, curing, antiquing-release removal techniques, sealing materials, and other factors will each affect the final performance and appearance of the imprinted concrete.

A texture should be chosen that will provide adequate slip resistance for the area's intended use. Layouts should be carefully planned and thoroughly checked. Representative jobsite samples must be produced and approved as described in *8. Jobsite Samples* prior to concrete installation.

Variations in color and texture should be expected and are normally desired, since they increase the natural appearance of the surface.

The use of a bond-breaking agent is required so that tools will not stick to the surface of the plastic concrete, tearing it when the Pavecrafters tool is lifted. The use of LITHOCHROME®

Antiquing Release or LITHOTEX® Liquid Release is recommended. Solvent-based liquid release agents may cause LITHOTEX Pavecrafters Professional Grade Imprinting Tools to deteriorate over time and should not be used.

LITHOTEX Pavecrafters Professional Grade Imprinting Tools are designed for imprinting plastic architectural concrete flatwork and, though they may be used on the surface of freshly stripped and plastered vertical concrete, such as risers, they are not intended for extended use on vertical surfaces.

For a longer work life, LITHOTEX Pavecrafters Professional Grade Imprinting Tools should be used on concrete that is in the proper stage of plasticity and after each use, should be cleaned and stored as described in *18. Tool Maintenance* and *7. Storage and Work Life*.

3. Tool Descriptions: LITHOTEX Pavecrafters Professional Grade Imprinting Tools are the primary tools in a system designed for ease of use and the highest productivity. When used in conjunction with companion accessory tools, they form a complete set of texture-matched tools, allowing design placement under a variety of job conditions.

LITHOTEX Pavecrafters Professional Grade Imprinting Tools are used to produce the main pattern. Single-design tools may produce the entire pattern, or several different tools may be required, each forming a variation of the pattern. Depending on the design, Professional Grade Imprinting Tools may be used to form repeat patterns or rotated or staggered to vary the design. LITHOTEX Pavecrafters Professional Grade Imprinting Tools provide a rigid working surface, are equipped with handles for ease of placing, and normally include grout or joint lines. Irregularly shaped tools are designed with markings on the top of the tool to aid in pattern alignment.

Border tools are used to form borders around or bands through the design, and may complement or contrast with the texture and pattern of the Professional Grade Imprinting Tool. They are equipped with handles and normally include grout or joint lines.

Floppy tools are used to complete sections of a design in areas where a more pliable tool is required. They are extremely flexible and are matched in

texture, pattern, and size to the LITHOTEX Pavecrafters Professional Grade Imprinting Tools and border tools.

Filler tools are used to fill in small sections of the design, such as a single masonry unit or a corner. They normally include grout or joint lines and are matched to the texture and pattern of the LITHOTEX Pavecrafters Professional Grade Imprinting Tools and border tools.

Texturing tools are designed for applying surface texture only, without grout or joint lines. They are primarily used in hard-to-reach areas, for touching up damaged surface sections, and to texture adjacent vertical surfaces such as risers and retaining or planter walls. Matching the texture of the LITHOTEX Pavecrafters Professional Grade Imprinting Tools and border tools, they are very flexible with a maximum size of 1 square foot (305 mm²).

4. Textures and Patterns: LITHOTEX Pavecrafters Professional Grade Imprinting Tools are available in a wide variety of textures and patterns. For many individual patterns, a pattern detail sheet is available which shows tool dimensions, the completed pattern, and information about companion tools and products. Please contact Scofield for available patterns and to request specific pattern detail sheets.

5. Sizes: The length and width of individual Pavecrafters tools varies depending on the type of tool and the pattern. Tool dimensions are shown on the Scofield *Pattern Detail Sheet* for many patterns and are given on the *LITHOTEX Pavecrafters Professional Grade Imprinting Tools Price List*.

6. Custom Tools: Pavecrafters tools in custom textures, patterns, and sizes can be manufactured to meet individual design requirements. Custom tools can be created from samples, or from drawings showing accurate dimensions, elevations, and cross sections. Custom tools require the creation of a new master and a charge for designing the master will be incurred. Scofield should be consulted about the manufacture of specific custom tools.

7. Storage and Work Life: LITHOTEX Pavecrafters Professional Grade Imprinting Tools are factory-packed so that they remain flat during transportation. To prevent deformation during

storage and between uses, Pavecrafters tools should be stored flat, textured face up, with no objects resting on top. Storage should be under roof in a cool, clean area out of direct sunlight (UV) and away from excessive heat. All surfaces should be kept clean and covered. Covering with opaque plastic sheeting or tarpaulins is recommended. Work life depends on the amount of use, care taken of the tool during use, tool maintenance, and storage conditions.

8. Jobsite Samples: Prior to concrete placement, a sample slab, and if included in the design, vertical surfaces such as risers and retaining walls, must be produced and approved for each pattern and layout specified. Samples should be of representative size, a minimum of 100 square feet (10 m²), so that the color combinations, pattern layout, installation techniques, and timing can be confirmed and approved. All procedures should be performed by the same workers that will produce the project imprinted concrete, using the same techniques, materials, Pavecrafters tools, and other required tools or equipment.

Producing imprinted architectural concrete requires skill and practice. Jobsite samples allow selected colors, materials, tools, and construction techniques to be evaluated and adjusted or changed when needed. Jobsite samples are especially important when the imprinted surface is antiqued or is to be chemically stained later.

For safety reasons, the entire surface of the jobsite sample should be inspected to verify and approve the adequacy of wet and dry slip resistance.

9. Layout Considerations: Since the size of each Pavecrafters tool will vary depending on the texture and pattern, the layout should be determined in advance for each area to be imprinted. Area dimensions and tool placement should be planned to produce an optimum appearance from the specified pattern.

Areas to be imprinted should be designed so that their dimensions are in multiples of those of the imprinting tools plus approximately $\frac{1}{16}$ inch (2 mm) per tool to allow for movement during imprinting. Since variations occur in straightness, pattern placement should not directly follow walls, but start at the form lines.

Imprinting installations normally follow straight lines, even when the substrate concrete does not, as often happens when imprinting curved walks and drives. When possible, place patterns to avoid looking down long grout or joint lines, making minor straight-line placement errors more noticeable. The best appearance will be obtained if long grout or joint lines are at an angle to the primary line of sight.

Elements that break or interfere with the pattern such as columns, walls,

steps, planters, and drains should be considered and their placement or the pattern placement planned so that natural stopping points are formed. When possible, construction joints should be placed so that they are masked in the pattern, usually along pattern grout lines or boundaries.

Predetermined measuring points should be included in the plans or drawings for use in the initial alignment of the pattern and to check alignment accuracy as imprinting proceeds.

10. Equipment and Materials: When using equipment and materials during preparation and installation, suitable protective gear should be worn and government regulations, manufacturer's instructions, and all applicable safety requirements should be followed.

Depending on the pattern and layout, hand tools such as chisels for hand-placing joint and grout lines or brick-mason jointers for dressing joints may be required. All equipment and materials considered for use should be tested for suitability and appearance as described in *8. Jobsite Samples*.

The concrete coloring material for freshly placed concrete should be LITHOCHROME Color Hardener. It allows the production of sharp, clear, wear-resistant textures, and creates durable, dense and easy-to-maintain imprinted surfaces with excellent color intensity. EMERCHROME Floor Hardener is recommended for imprinted concrete when a heavy-duty, more slip-resistant surface is required in heavy traffic areas. Concrete integrally colored with CHROMIX[®] Admixtures for Color-Conditioned[™] Concrete can also be imprinted. When resurfacing and imprinting or texturing existing concrete surfaces, SCOFIELD Texturetop Stamp Grade colored cementitious toppings should be used. SCOFIELD Texturetop Stamp Grade effectively performs at depths from $\frac{1}{8}$ inch (3 mm) to $\frac{3}{4}$ inch (19 mm), and can be imprinted with LITHOTEX Pavecrafters Professional Grade Imprinting Tools that have a profile depth that is half or less of the application thickness. Additional information is available in Scofield's Tech-Data Bulletins *A-104 LITHOCHROME Color Hardener*, *A-204 EMERCHROME Floor Hardener*, *A-304 CHROMIX Admixtures for Color-Conditioned Concrete*, or *C-724 SCOFIELD Texturetop*. The appropriate Tech-Data Bulletin must be read completely before using.

The bond breaker, LITHOCHROME Antiquing Release or LITHOTEX Liquid Release, helps prevent the imprinting tools from sticking to the fresh concrete and marring its fragile surface. For an antiqued effect, LITHOCHROME Antiquing Release in a different color than that of the colored surface should be chosen. After the antiquing release

is applied, a portion of the colored material becomes embedded in the surface where it is trapped by the hardening concrete. When the surface is subsequently washed and sealed, an attractive, variegated, mottled, and antiqued appearance is obtained with colors ranging from that of the underlying concrete to that of the antiquing release, with mixtures of the two the most likely. If a more monochromatic color effect is desired, a color matching that of the colored surface should be used. When an antiqued appearance is not desired, colorless LITHOTEX Liquid Release is used to provide easy release of the tool and reduce surface marring. Scofield's Tech-Data Bulletin *A-854 LITHOCHROME Antiquing Release* or *T-604 LITHOTEX Liquid Release* must be read completely before using.

For chemically staining cured concrete, LITHOCHROME[®] Chemstain[™] Classic or LITHOCHROME[®] Tintura[™] Stain should be used. LITHOCHROME Chemstain Classic is used to create uneven, variegated color effects on imprinted hardscapes and floors, much like a timeworn patina or the shadings of natural stone. LITHOCHROME Tintura Stain creates vibrant color on imprinted concrete in shades that range from light tints to brilliant opaque colors. Scofield's Tech-Data Bulletin *A-414 LITHOCHROME Chemstain Classic* or *A-424 LITHOCHROME Tintura Stain* must be read completely before using.

Tampers should be of professional quality, long-handled, and with a square, flat base made of steel, wood, or rubber. The base should be large enough to spread the force evenly over the back of the Pavecrafters tool without causing damage, approximately 8–10 inches square (200–250 mm square). A LITHOTEX Pavecrafters tamping tool is available from Scofield.

Hand tools should be of high-grade steel, of professional quality and of a suitable size for their intended use.

The concrete sealer should be chosen depending on the effect desired. When a clear sealer is desired, multi-colored surfaces should be sealed with CEMENTONE[®] Clear Sealer or SCOFIELD[®] Cureseal[™]. When a more opaque, monochromatic appearance is desired, surfaces should be sealed with COLORCURE[®] Concrete Sealer in a color matching that of the underlying concrete. For optimum protection, SCOFIELD[®] Selectseal[™] is recommended for sealing the imprinted-concrete surface. The appropriate Scofield Tech-Data Bulletin *A-764 CEMENTONE Clear Sealer*, *B-204 SCOFIELD[®] Cureseal-W[™]*, *B-604 SCOFIELD[®] Cureseal-S[™]*, *A-634 COLORCURE Concrete Sealer*, *B-504 SCOFIELD[®] Selectseal-W[™]*, or *B-514 SCOFIELD[®] Selectseal-S[™]* must be read completely before using.

For sealing construction joints, LITHOSEAL™ Trafficalk-3G™ should be used. LITHOSEAL Trafficalk-3G is a premium-quality joint sealant for areas subject to pedestrian and vehicular traffic and is available in all standard, designer, or custom colors of LITHOCHROME Color Hardener and CHROMIX Admixtures for Color-Conditioned Concrete. Scofield's Tech-Data Bulletin *S-404-3G LITHOSEAL Trafficalk-3G* must be read completely before using.

11. Preparation: Prior to placing concrete, representative jobsite samples must be produced as described in *8. Jobsite Samples*. Surrounding areas and adjacent surfaces should be protected, work areas roped off and appropriate sections closed to traffic. **For exterior hardscapes,** landscaping should be protected, parked vehicles removed, and doors and windows closed in nearby buildings to prevent colored dust from entering. **For interior floors,** walls should be protected and adjacent areas sealed off to prevent colored dust or construction contaminants from entering other sections of the building.

Weather conditions should be considered when planning installations. Professional practices as described in ACI standards *305R Hot Weather Concreting* and *306R Cold Weather Concreting* should be followed. Since the release agent is either a very finely ground powder or a liquid, wind conditions will severely affect their application. For best results installation should be on a still day, when possible. When imprinted concrete must be installed in hot, windy weather, wind breaks should be considered.

Climatic conditions, experience in imprinted-concrete installation, and other factors will affect the number of imprinters required. Sufficient personnel should be scheduled. Smaller pours should be considered to allow adequate time for the imprinting procedure.

Reference points should be established and guidelines placed to serve as reference for pattern placement and to check alignment as installation proceeds. Walls are normally not used for aligning patterns. The pattern normally is started at the form line and is filled in at the wall by hand tooling with Pavecrafters filler tools or texturing tools. For most layouts, the corners of the forms must form exact right angles so that the pattern will not drift out-of-line as imprinting proceeds.

When adequate tools are available, installation becomes easier, faster, and more precise. Since imprinting normally proceeds in rows, a sufficient number of tools should be available to complete one row and begin placement of the next row before removing tools for reuse. Usually enough tools to form

a row across the width of the installation plus two extra are supplied. This allows sufficient tools to finish a row and begin another. The extras also allow for replacements in case a tool is damaged during use.

Before the concrete is ordered, placing a trial layout over compacted, moist sand is recommended to reduce error. The position of each Pavecrafters tool should be marked by guidelines or by grease pencil on the forms for reference during imprinting.

Equipment and materials as described in *10. Equipment and Materials* should be placed adjacent to the area to be imprinted. Sufficient bags of LITHOCHROME Color Hardener and pails of LITHOCHROME Antiquing Release or LITHOTEX Liquid Release should be opened and positioned around the perimeter as needed.

12. Concrete Substrate and Color Hardener Application:

A crusher-run or sand base is recommended under slabs on ground to facilitate drainage. The use of vapor barriers should be avoided when possible. Since they do not allow excess water to escape through the subgrade, their use may delay the start of imprinting.

For best results, concrete on ground should be a minimum of 4 inches (100 mm) in thickness. The concrete should contain a minimum of 5½ sacks (517 lb) of cement per cubic yard (300 kg/m³) of concrete. The water content should be the minimum practicable, and the slump should not exceed 4 inches (100 mm). Use of a retarded-set, water-reducing admixture should be considered to lengthen work time.

The subgrade should be prepared, the concrete designed and placed, and LITHOCHROME Color Hardener or EMERCHROME Floor Hardener applied as described in Scofield's Tech-Data Bulletins *A-104 LITHOCHROME Color Hardener* or *A-204 EMERCHROME Floor Hardener*. The appropriate Tech-Data Bulletin must be read completely before using.

For information on installing and imprinting SCOFIELD Texturetop Stamp Grade cementitious toppings, refer to Scofield's Tech-Data Bulletin *C-724 SCOFIELD Texturetop*.

13. Imprinting: Construction techniques, materials, and timing to produce the desired effect should be determined from the jobsite sample as described in *8. Jobsite Samples*. Equipment and materials as described in *10. Equipment and Materials* should be available and guidelines should be set. Dust masks, safety goggles, and gloves are recommended.

Immediately prior to imprinting, the concrete should be installed and the color hardener applied as described

in *12. Concrete Substrate and Color Hardener Application*. Timing is critical since imprinting must be completed before the concrete hardens. The concrete must be plastic enough so that a sharp imprint can be produced but hardened enough to retain it. As a guide to determining when concrete is at the correct state of hardening, a finger pushed into the surface should leave a slight indentation. If the indentation keeps its shape, it is an indication that the concrete is at the proper stage to be imprinted and imprinting should start and proceed without delay.

If LITHOCHROME Antiquing Release is to be used, clean Pavecrafters tools should be preconditioned prior to use by coating them thoroughly with the antiquing release in the color specified. Excess antiquing release should be removed by shaking the tool gently or lightly brushing with a soft-bristle brush. The Scofield Tech-Data Bulletin *A-854 LITHOCHROME Antiquing Release* must be read completely before using.

If LITHOTEX Liquid Release is to be used, it should be sprayed in a fine misting spray evenly over the surface of the clean imprinting tool and the concrete surface. The Scofield Tech-Data Bulletin *T-604 LITHOTEX Liquid Release* must be read completely before using.

Imprinting installation is normally done in rows across the width of the area to be imprinted. Immediately prior to placing LITHOTEX Pavecrafters Professional Grade Imprinting Tools or border tools, a layer of LITHOCHROME Antiquing Release or LITHOTEX Liquid Release should be applied over the section of color-hardened surface that will be covered by the first row of tools.

To prevent adhesion during imprinting, a complete and adequate layer of antiquing release or liquid release should exist between the concrete and the Pavecrafters tool. Sufficient material should be applied so that the sheen disappears from the surface of the concrete, but since texture detail may be diminished, the application of an excessive amount should be avoided.

When using LITHOTEX Pavecrafters Professional Grade Imprinting Tools or border tools, predetermined guidelines and reference marks on the forms must be followed. The first row of LITHOTEX Pavecrafters Professional Grade Imprinting Tools or border tools should be carefully positioned over the antiquing release or liquid release. Each successive Professional Grade Imprinting Tool or border tool should be placed tightly against the preceding tool, matching the alignment marks on the top of the tool and maintaining a straight pattern. After the first row is positioned, the concrete should be imprinted by applying pressure to the top of the tool. When the concrete is at optimum hardening for imprinting, a

moderate amount of force is needed to form the imprint. Stepping from one tool to the other should be sufficient to set the tools to the desired depth.

LITHOCHROME Antiquing Release or LITHOTEX Liquid Release should be applied along the length of the next row. The first tool in the row should be set before lifting a tool in the preceding row. Tools should be lifted in the same order as they were placed, aligning them in the following row with the two previously placed, adjacent tools. Pre-placed guidelines and alignment marks on the top of the Pavecrafters tools should be used to maintain straight pattern rows. Imprinting should continue in the same manner for following rows. As the concrete hardens, greater force will be needed to achieve a uniform impression depth and tampers may be required.

Pavecrafters floppy and filler tools should be used to finish rows and fill in sections of the design where it is not convenient or possible to use rigid or border tools.

Regardless of which LITHOTEX Pavecrafters tools are used, the surface should be periodically inspected for damaged areas or areas where the imprinting depth requires correcting. Border tools or LITHOTEX Pavecrafters Professional Grade Imprinting Tools may be carefully replaced and the impression deepened by tamping, or floppy and filler tools may be used. Areas where the texture is torn or damaged should be repaired by use of Pavecrafters texturing tools. Hand chisels should be used, where needed, to deepen or create joint lines.

Vertical surfaces adjacent to imprinted flatwork, such as risers and curbs, can be imprinted, but the procedure should not be attempted without practice on jobsite samples. The forms should be stripped as soon as the concrete is self-supporting. LITHOCHROME Color Hardener or EMERCHROME Floor Hardener, mixed with water to a plaster consistency, should be troweled onto the vertical surface as described in the appropriate Scofield Tech-Data Bulletin *A-104 LITHOCHROME Color Hardener* or *A-204 EMERCHROME Floor Hardener*, which must be read completely before using. The plastered area can then be imprinted, normally by use of a Pavecrafters floppy tool or texturing tool.

To prevent marring the texture of the pattern, tools should be periodically inspected and hardened concrete residue removed as described in *18. Tool Maintenance*.

After imprinting, the concrete should be cured with new and unwrinkled, non-staining, kraft curing paper conforming to ASTM C 171 *Sheet Materials for Curing Concrete* until it has gained sufficient strength not to be damaged.

Imprinted concrete surfaces should be protected from damage by other trades until the end of construction.

14. Antiquing Release Removal: To reduce tracking and staining of other areas, excess LITHOCHROME Antiquing Release may be removed by brooming or vacuuming the imprinted-concrete surface after it is hard enough to walk on without marring. After the imprinted concrete has been installed for 3–7 days depending on curing rate, the remaining unembedded antiquing release should be removed by a high pressure detergent wash, followed by a thorough rinsing. An adequate area should be tested prior to washing and rinsing the entire surface to insure that the concrete is strong enough to resist damage and scaling.

Sufficient antiquing release should be removed to obtain the desired effect. If the imprinted concrete is to be later chemically stained with LITHOCHROME Chemstain Classic or LITHOCHROME Tintura Stain, thorough removal of the antiquing release is necessary to allow the stain to successfully react with the surface. Care should be taken so that adjacent surfaces are not stained, and runoff should be controlled in accordance with local, state, and federal regulations.

15. Sealing: As soon as possible after the LITHOCHROME Antiquing Release has been removed or the LITHOTEX Liquid Release has evaporated completely, and after the moisture content of the concrete is low enough so that alkali and other salts do not become trapped beneath the sealer, normally 14–28 days after placement, the surface should be sealed with CEMENTONE Clear Sealer, SCOFIELD Cureseal, or COLORCURE Concrete Sealer. The appropriate Scofield Tech-Data Bulletin *A-764 CEMENTONE Clear Sealer*, *B-204 SCOFIELD Cureseal-W*, *B-604 SCOFIELD Cureseal-S*, or *A-634 COLORCURE Concrete Sealer* must be read completely before using.

For optimum performance and durability SCOFIELD Selectseal is recommended for sealing and protecting imprinted-concrete flatwork. Scofield's Tech-Data Bulletin *B-504 SCOFIELD Selectseal-W* or *B-514 SCOFIELD Selectseal-S* must be read completely before using.

Care should be taken in preparing the surface before application of the sealer if LITHOCHROME Antiquing Release is used. The antiquing release agent may affect the adhesion between the sealer and the color-hardened surface, particularly if the unembedded material is not adequately removed.

All sealed surfaces should be thoroughly inspected to verify and approve installation and safety, including wet

and dry slip resistance, prior to opening the area to traffic.

16. Joint Sealing: All joints should be sealed with LITHOSEAL Trafficalk-3G. Scofield's Tech-Data Bulletin *S-404-3G LITHOSEAL Trafficalk-3G* must be read completely before using.

17. Maintenance of Imprinted Surfaces: A maintenance application of CEMENTONE Clear Sealer, SCOFIELD Cureseal, COLORCURE Concrete Sealer, or SCOFIELD Selectseal should be made periodically to protect the base sealer. The appropriate Scofield Tech-Data Bulletin *A-764 CEMENTONE Clear Sealer*, *B-204 SCOFIELD Cureseal-W*, *B-604 SCOFIELD Cureseal-S*, *A-634 COLORCURE Concrete Sealer*, *B-504 SCOFIELD Selectseal-W*, or *B-514 SCOFIELD Selectseal-S* must be read completely before using.

18. Tool Maintenance: LITHOCHROME Antiquing Release or LITHOTEX Liquid Release will not harm LITHOTEX Pavecrafters Professional Grade Imprinting Tools. LITHOCHROME Antiquing Release residue may be allowed to remain on the surface after excess material is removed by shaking or brushing with a soft-bristle brush. LITHOTEX Liquid Release will evaporate completely off the surface of the tools.

Prior to storage or when required to prevent color contamination, Pavecrafters tools should be cleaned of concrete residue, antiquing release residue if the product was used, and other foreign matter by scrubbing with a medium-stiff, nylon-bristle brush, warm water, and a suitable, high-quality liquid detergent. After rinsing, tools should be allowed to dry completely before storing as described in *7. Storage and Work Life*.

19. Availability: LITHOTEX Pavecrafters Professional Grade Imprinting Tools are marketed directly to the user from Scofield's Atlanta and Los Angeles warehouses as well as selected distributors nationwide. Not all textures and patterns are stocked. Contact Scofield's Customer Service Department for availability on patterns not in stock or to inquire about custom tools.

20. Warranty Summary: For the complete warranty statement and important limitations, read the *Material Safety Data Sheet and Warranty*. Generally, Scofield represents and warrants only that its products are of consistent quality. No other oral or written statement is authorized. Any liability is limited to refund or replacement of defective product. The end user shall determine product's suitability and assume all risks and liability.