

STANDARDS COMMITTEE REPORT ON ROOFING SLATE THICKNESS, KNOTS AND KNURLS...OH MY

Natural Slate for roofing is economical, efficient and practical. The term slate, in ordinary usage, denotes a natural rock which has a more or less perfect cleavage plane. This makes slate particularly adaptable to various roof applications.

Slates may vary in color and chemical composition and also in their physical properties. The component particles, with very few exceptions, cannot be distinguished under a microscope, except in thin sections. There are few other stones commercially used that are so closely linked with the necessities required for a lifetime roof service. Commercial and structural slate deposits, are geologically distributed throughout eastern North America.

Hand craftsmanship of a natural material is what helps produce the charm of slate. Slate tiles are hand split with a hammer and chisel and then trimmed to make various sizes and thickness. Two slate shingles can no more be exactly alike in texture than two leaves from the same tree. This is part of the charm of slate. A slate roof has an air of hand craftsmanship that has become the distinctive, and even the "distinguished" feature of the building. When slate first came into use in North America, it was chosen for its practical purpose. Today its use is still based as much on its practical qualities as its aesthetic qualities.

Thickness, knots, knurls and texture are the aesthetic qualities that come with the hand craftsmanship of a natural material. Slate is hand split with great care to maintain a standard thickness for the requirements of the order. Slate from the same quarry, bed, and block will vary slightly in thickness. Some may vary from 1/64th to 3/16th inch. Hand held chisels are lined up by eye and hit by hammers to split slate. The most valuable element of production are the splitters themselves. Their skill is the secret to producing good roofing slate at the proper thickness.

Knots are an isolated protuberance and a knurl is an indentation on the slate's surface. They are most commonly seen in medium to rough texture slate. Knots

and knurls may also be found in smooth grain slates but are usually hardly noticeable. In quarry terms, knots and knurls can mean the slate bed is a hard vein and generally shows up in the best quality roofing slate. When slate is split, knots and knurls may cause some pieces to be thick or thin. NOT TO WORRY. The slates that are too thick or too thin are usually culled out in the production process at the quarries. Roof slate passes through many hands during the process. Blocks of slate are brought in from the quarry and sawn down to manageable sized chunks. Next in line is the splitter, then the stacker who picks through and prepares the slates for trimming. Next is the trimmer, at times two people are needed. The slates are then stacked for punching or drilling of the nail holes. Last is the pallet stacker who packages the slates for shipping. During the process, the knots and knurls are positioned in a part of the slate not affecting performance or aesthetics. Some slates maybe discarded or saved for a more suitable job. It is very rare that a knot is large enough to be a problem.

During the production process the thick and thin slates are sorted out. TOO THICK or TOO THIN is determined by the order. Slates that are different in thickness can usually be laid properly on a roof. Proper sorting and blending takes an experienced slate roofer. If this is not done correctly it sticks out "like a sore thumb." A similar situation occurs when an inexperienced homeowner decides to install their own slate roof. Thick and thin slates can be avoided if it is important to the project. It usually results in extra cost and longer lead time.

Sometimes when slate is ordered, samples are sent for approval. More often, unless samples are clearly specified, experienced roofers, suppliers or distributors rely on the quarry to know what they are accustomed to receiving.

All of this previous writing is to suggest that from the beginning of commercial slate production in the 1800's, this is the way it is. When a project is being designed or is in a persons' mind, the supplier needs specific information to accurately fill the order. Natural roofing slate thickness is referred to by each quarry in the terminology that suits their product. 3/16" to 1/4", 1/4", 1/4"to3/8",

3/8", 3/8" to 1/2", 1/2", 1/2" to 5/8" and so on. In the real world of the slate industry, this information can only be given by the quarry that is producing the slate or the person who may already have it in hand to sell from their yard. It is important to note that different thicknesses mean different prices. This can be a problem for someone quoting slate from two different quarries. Experience and understanding of terminology and installation can dictate the outcome of the project.

This report was written by Pete Papay who serves the NSA as a member of the Standards Committee.