

# Taping for Hand and Fist Jam Cracks

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**R**OCK SHOES provide comfort and protection for the climber's feet as well as improving contact with the rock by their adhesion. A properly executed tape job similarly provides comfort for the hands and protection of skin from bruising, abrasions and lacerations. And just like shoes, hand taping confers a mechanical advantage, though in a somewhat different way: transferring load-bearing from hand skin to the bones of the wrist.

It is common knowledge that climbing jam cracks can be both strenuous and painful. Forming a hand or fist jam relies not on big extrinsic (forearm) muscles such as those which flex the digits at their last or next-to-last joints. Rather, the expansion of a slotted hand or fist relies on the small intrinsic muscles of the hand itself. In the case of hand jams (generally 1¾ to 3½ inches) the crucial muscles are the thenar group at the base of the thumb (to abduct the thumb) and the interossei between the metacarpal bones (to flex the fingers at the third-from-last or M-P joint). For fist jams, usually 3½ to 4½ inches, the interossei and lumbricals work to spread the metacarpal bones. At the thumb side the first dorsal interosseous and at the little finger side the abductor digiti quinti provide expanding muscle bulk. These muscles are obviously very small, but because of the great mechanical advantage of a jammed hand or fist, the security of a good jam is well known.

Though bones and muscles can be configured to widen the profile of the hand in a hand or fist placement, exerting pressure on the crack walls, loading comes from the wrist. A jam can force the skin of the hand so tightly against the rock that wounds result if sharp crystals are encountered. But the strength of the jam in withstanding a pull is jeopardized by sliding of loose skin on the back of the hand or elsewhere. A good tape job transfers the sliding stress from the loose skin to the solid bones of the wrist. The mechanical advantage of the jam is thus preserved.

Detractors of taping say that with use, hand skin will toughen. It may toughen somewhat, but back-of-hand skin lacks the true callus-forming potential of palmside skin. More likely, those who successfully jam without tape are those whose pain tolerance is increased. They are (with practice) able to make

jams with care and control, and their strength is enough to prevent sliding or moving of the jam in the crack, avoiding scraping or tearing.

But what of the weekend climber or spring Yosemite visitor who doesn't have the time or inclination to spend weeks or months waiting for his skin to toughen, or technique and strength to improve? What about the extreme demands made by very rough, granular, Joshua Tree-type desert granite, sharp-edged Kichatna granite, or flaring, shallow or very irregular cracks where hand-rock pressure, instead of being well distributed, is concentrated at a few painful points? And what about very long crack climbs such as the Lost Arrow Chimney, Steck-Salathe or West Face of Sentinel, and the ultimate: the Nose of El Capitan? Abrasions and lacerations take a week to heal even if they don't get infected!

Taping has obvious utility for crack climbers, and just as obviously its use is a personal decision, like using shoes. Unlike pitons, bolts or chalk, tape has no effect on rock (except to reduce bloodstains). But most taping is ineffective. Either the tape peels off quickly, restricts hand motion (or even causes cramps by being too tight) or provides incomplete protection. Very few climbers know how to tape properly, especially for transferring stress to the wrist. But standard principles of athletic taping apply.

First, start with proper materials. The "waterproof" adhesive tape sold for first aid is inadequate because of lack of adhesion. Obtain (from a sporting goods store or medical supply house) regular 1½- or 2-inch athletic or medical cloth adhesive tape. Especially for small hands, 1½-inch tape is easier to apply. For those with large hands or expertise in taping, 2-inch tape provides better coverage and longevity with fewer layers. Old gummy tape that can only be removed from the roll with difficulty is better for adhesion but somewhat harder to use.

Second is proper skin preparation. Shaving the hand and wrist reduces pain on tape removal. Cleaning skin oils off with soap and water or (better) white gas, acetone or alcohol will improve adhesion. Spray (such as Cramer Tuf-Skin) or liquid benzoin, a sticky pitch-based compound, will markedly improve adhesion. Adhesion is important because it permits the tape to be applied relatively loosely and still hold. Otherwise, a tight, restrictive wrap would be required.

Third is actual tape application. As shown in the accompanying series of photographs, tape strips are first applied to the palm and back surfaces of the base of the thumb. A double layer on the palm surface is recommended for durability as it is a high-wear spot. Next, a continuous strip is applied without tension (unroll a foot or two at a time and lay on) starting in the palm, around the side of the hand, and across the knuckles extending as far out as the finger web. Then the strip is led down around the wrist for anchorage, back up across the palm to the side of the hand, though not as far out as the first wrap there, across the back of the hand again, around the wrist again and finishing in the palm. With this pattern, important areas are covered and tape is oriented in a criss-cross to overlap, to protect against peeling off and to be anchored at the wrist. Extra wraps can provide more protection and durability if desired. Such a tape

job when executed with skill does not restrict or constrict the hand whatsoever and will last, if desired, for the twenty-plus pitches of crack climbing on the Nose of El Cap or for a week in Joshua Tree. If it wears thin, reinforcing strips can be used on top.

To remove tape, use a bandage scissors or knife to cut from wrist to palm and rip. At this point, you may wish you had shaved before applying. More white gas, acetone or alcohol will remove adhesive and benzoin.

