



5 STEPS

for Infrared Success on the Jobsite

@David Prah - stock.adobe.com

As the popularity of infrared equipment continues to grow, it's important for contractors to properly complete these repairs

Infrared equipment has been evolving for years into the mobile and versatile units contractors are using today. What has also been evolving is the way contractors can use this equipment to expand their business and complete work more efficiently.

While putting a piece of infrared equipment to work is fairly easy, proper training and best practices are important to ensuring both the integrity of the pavement and the satisfaction of your customer.

1. Evaluate

Before you recommend an infrared repair to your customer, you need to evaluate the pavement damage. Infrared is not a miracle cure for all pavement failures. If there is base failure under the damaged area, an infrared patch will only be a temporary solution. This kind of failure cannot be repaired safely using infrared and a repair must be done properly to ensure a lasting and safe patch. In this case, you should offer a complete remove and replace to your customer instead of a temporary patch.

You also need to evaluate the area you will be working. Depending upon the job site, traffic control measures will vary but it's extremely important for the safety of your crew, and the initial patch, to keep cars away from where you're working. Set up a plan before starting work. Use proper barricades and set up warning signs to divert traffic well in advance with cones and directional lights. If working on a roadway, be extra cautious, especially on hills where you are not as easily visible.



@Aleksandr Lesik - stock.adobe.com

2. Heat

Next, you need to properly prepare the area before you begin the infrared process. Make sure the area for repair is clean, free of debris and dry. Place the infrared machine over the repair area. Maintain a minimum 3-in. perimeter larger than the actual repair. Allow the infrared heating unit to properly soften the pavement to a depth of 1.5-in.— 2.5-in. This process will take 8-10 minutes.

It's important to not overheat the area. Asphalt absorbs heat at certain rates and too much heat in too short of a time will scorch the top

of the asphalt and not heat the material to the sufficient depth needed.

After the material is properly heated, the repair area needs to be scarified where all old material is scraped up and ready to be rejuvenated. If large parts of the repair area are left un-scarified, it makes the rest of the repair extremely difficult, and it will ultimately fail. The best method is to scarify 75% of the repair from one side and then move to the other side of the repair to scarify the rest. This method will ensure the entire area is scarified completely.



3. Execute

Straighten and taper the edges. The tapered edge helps create a strong bond between the old, heated asphalt that stays and any newly added material.

Next, use a rejuvenating agent. Rejuvenators will aid in minimizing potential raveling and ensure a long-lasting patch. One-tenth gallon per square yard is an industry rule of thumb measurement for how much to apply. Job site settings, asphalt quality and workmanship will contribute to the actual consumption use of rejuvenator. A helpful hint is to apply a uniform misted coating across the surface of a completed repair, add sand or sanded asphalt, and then compact the blend thoroughly into the surface. This practice almost promises a tight, uniform, durable repair.

A good lute person is another huge factor in creating a successful infrared patch. When luting the area, your lute person needs to be sure to remove all the larger stone and aggregate from the top of the repair area to create a tighter bond, achieve a better compaction rate, and lessen the chance of future water penetration. Make sure they are moving in from the outside edge when luting to create a heated weld between the repair area and the surrounding pavement. The heated weld is what prevents future water penetration and ensures a long-lasting infrared patch.



4. Compact

Once the heated and rejuvenated material is processed, the area needs to be level before compaction. The repair area should be left 1/4-in. above grade so when you do compact the area, it is level with the surrounding pavement. Repair areas that are left even with the surrounding asphalt prior to compaction will end up creating a low spot. A good lute man will quickly level the repair with one or two passes of the lute, minimizing heat loss time as well as minimizing the need to pull stone from the surface.

This will help you compact the area at the hottest possible point to ensure a tight bond in the repair area. If your repair area cools down too much, you can reheat the area for 1-2 minutes to bring it back up to optimal compaction temperature.

When compacting an infrared repair, always compact the edges first. The edges are the most likely spot for raveling, so “pinching” the edges with a compactor, or roller, first will create a tight bond between the edge of the repair and the surrounding pavement. Compacting the edges first welds the heated edge of the repair area to the heated edge of the area outside the repair.



5. Pay Attention



@rukstockphoto - stock.adobe.com

Safety is incredibly important on any job site, but particularly with infrared repairs where the machine is heating the surface to 350° F. Crews should be aware that this process is like any other job site and exercise good judgement and wear the appropriate clothing, eye protection and other PPE.

Training for safety and usage is also key to success for using any piece of equipment. Training should cover all safety precautions on the machine and make sure each user has a full understanding on how to operate the machine in a safe manner.

Most infrared equipment tends to be fueled by propane so there is a certain awareness operators should have that they should observe when working around any combustible fuel or material as well.

Infrared repairs can be completed in as little as 20 minutes, making them a cost-effective solution for your crews and your customers. Pay attention to the details and complete the best repairs possible to keep your business thriving and your customers happy.