The Effect of Heat on Flooring

The word ***heat*** is a word that can mean so many different things. Such as you can feel ***hot*** or “don’t touch the stove, it’s ***hot***”, or you were in a ***heated*** argument, or the sun sure is ***hot*** today, or this food would taste better if it were ***warmer***, or this food is so spicy it ***burned*** my mouth. So the word heat can mean many different things and comes to us from many different sources. One of the many definitions for the word heat is: ***added or external energy that causes a rise in temperature, expansion, evaporation, or other physical change.***

ABOUT THIS ARTICLE

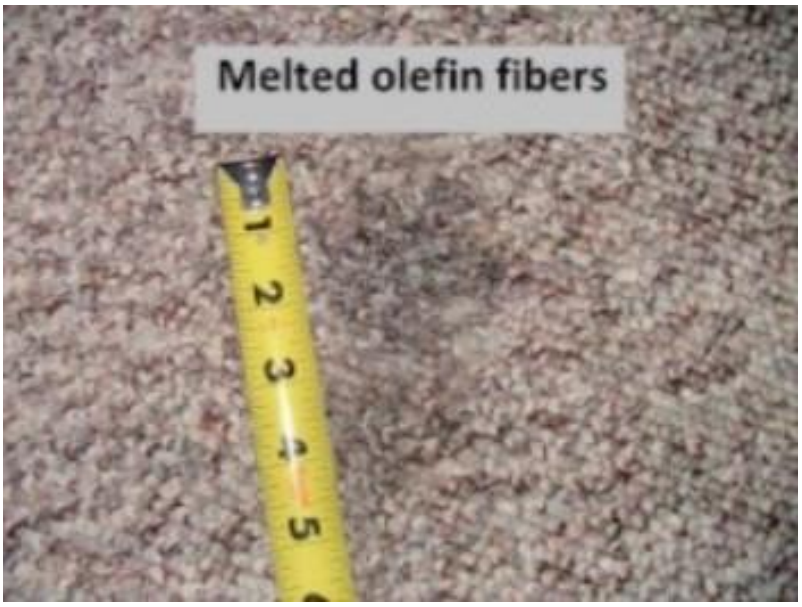
In this article I am going to share with you the effect heat, in several different forms, had on carpet and floors I have inspected.

CARPET

In my last article about bonnet cleaning I used this photo. I have seen swirl marks and crescent-shaped friction burns in carpet because the operator was not using sufficient detergent to lubricate the bonnet. Too much friction between the bonnet and the carpet melted the carpet yarns.

This photo also shows friction burns in carpet, however this time it was caused by the revolving brush bar on the upright vacuum. The vacuum the copier repair person used. He forgot the brush bar continued to revolve when he was using the on-board attachments while vacuuming out the copier.

In this photo, it shows carpet made with wool damaged due to improper chemistry. The pH of the chemical the cleaner was repeatedly using was too alkaline. The wool fiber was chemically burned.



This photo shows the Berber style, olefin/nylon carpet to be melted. I was asked to determine if a certain over-the-counter solvent based spot remover melted the carpet fibers. Ahhh....no. It was the teenager who used a hair dryer to flash dry the carpet before mom got home. Olefin has a very low melting point.

RESILIENT LVP

In the photos above, the caption says it all. In all the installation guidelines I have read, they specifically state one way or another, "do not install in locations exposed to direct sunlight". In the photo to the right, that is doable by simply closing the draperies. Not so much in the photo to the left as this floor was installed in a renovated warehouse where the windows letting in the sun are 30 or more feet above the floor. Unfortunate as it may be, some flooring types are just not good candidates for certain environments.

In the two photos above, a heavily textured LVP floor installed in a conference room has friction burns on it. The four 1/2 inch wide by 1 inch long plastic glides on the bottom of the chairs created enough friction to permanently damage the vinyl. Picture a person (200lbs. or more) seated in the chair sliding forward and/or backward. That is asking each glide to support 50 or more lbs. each. Due to the heavy texture of the floor, the glide was only supported by and skimming over the highest ridge points. So they switched to felt glides. There was so much friction between the felt and the ridges on the floor the felt became impinged to the ridges. Nice floor, wrong application.

CERAMIC TILE

The consumers said the noise was as if a gun had gone off in the dining area of the kitchen when the ceramic tile suddenly "blew" off the subfloor. No doubt there were some installation issues that may have exacerbated the failure but the main cause was thermal expansion. This occurred at the end of January. The windows in the dining area face south. They had some pine trees removed the previous year. The trees shaded the dining area from the low sun that occurs during the winter months. The coldest days of the year in northeast Ohio are when the sun is shining bright because there isn't a cloud in the sky to insulate the earth. I know this because I live in a passive-solar home and rely on the sun’s rays to help heat my home in the winter. In the case of the floor above, thermal expansion of the tile with no accommodation/expansion spacing...something has gotta give.

This photo shows a cracked ceramic tile. The crack occurred directly over the OSB subfloor joints. Radiant heat tubes are installed directly to the underside of subfloor. The radiant heat system rapidly overdried the subfloor causing the sanded flat joints to shrink and pull anything installed over it down with it, and when the floor shrunk in thickness it caused reflective cracking in the tile.

WOOD

This one is a head shaker and I think someone needs dope slapped. What was the installer thinking? The concrete was less than 60 days old when the installer decided to install this floor over radiant heated concrete. The radiant heat drove the moisture out of the concrete up into the wood. The wood is ruined, very sad.

I am certain this floor was lovely when it was first installed 10 years ago. After years of direct sun exposure through the patio doors the finish on the floor is finally giving up and can't take it anymore. Remember polyurethane finishes on wood floors are plastic with ultraviolet light inhibitors but they can only take so much abuse. They eventually become brittle, fracture and disintegrate.

SUMMARY

The effect heat has on flooring is unavoidable, however the ***harsh*** effects can be avoided. Sometimes it's too late and the damage is done, which is sad. Was someone in too big of a hurry? Did someone along the line say ***"not my job?"*** Were the installation specifications, technical bulletins and care and maintenance instructions blown off? All reasons ***I have a job***. This is why all aspects of the installation and the cleaning and maintenance of the carpet and flooring need to be considered, ***BEFORE IT IS INSTALLED.*** We both know that there will always be product defects and a myriad of other issues that cause carpet and flooring installations to fail, due diligence will help avoid ***heat*** related issues.

ABOUT THE AUTHOR

Mark Violand has been in the carpet cleaning and restoration industry for over 38 years. He is an Institute of Inspection, Cleaning and Restoration Certification (IICRC) Certified Carpet Inspector and approved Instructor. He teaches the Carpet Cleaning Technician, Commercial Carpet Cleaning and Maintenance, and Carpet Repair and Reinstallation Technician courses.

His reputation precedes him as Northeast Ohio's "go-to" floorcovering inspector, working for carpet, resilient, wood, and laminate manufacturers, and floorcovering retailers, consumers, attorneys, and insurance companies.

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