

**Jagger Enterprises, Inc. dba Buckeye Home Inspections
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May 17, 2000

**M/M Name Deleted
address
city & state**

Represented by: **Name Deleted, Esq.
Law Firm
address
city & state**

Your File#

At the request of **Name deleted** an inspection of the concrete driveway, parking/turnaround area, access walk, front patio area and garage floor of the **Name deleted** residence located at **city & state** was conducted by Jagger Ent., Inc. dba Buckeye Home Inspections on Thursday, May 11, 2000. The inspector was Jim Jagger. **Ms. Name deleted** was present at the time of the inspection. Per **Ms. Name Deleted**, concrete was installed in June of 1997. Weather at the time of the inspection was partially cloudy with temperature in the low 70's.

Definitions:

Air Entrainment - Intentional incorporation of minute air bubbles in concrete to improve durability to freezing and thawing exposures or to improve workability

Scaling - Separation or breaking away of smaller flakes of the concrete surface (of commonly in widespread and extensive areas). Most scaling is caused by **a)** lack of proper air entrainment or **b)** improper finishing techniques.

Spalling - breaking away or lifting off of relatively large, thin layers of the surface. Spalling is related to a weakness in concrete which may extend to full depth of the slab. Possible causes of spalling include **a)** a weak mixture caused by improper proportions of sand, water and cement, **b)** improper use of admixtures (plasticizers. If inappropriate admixtures are used, concrete may require excessive water which will

weaken the concrete, c) lack of proper air entrainment, d) improper finishing or e) improper curing.

Observations-

I) Access Sidewalk + Garage Floor

The access walk which runs parallel to the side of the garage as well as the garage floor are in satisfactory condition. No action recommended in these areas at this time.

II) Driveway, Parking/turnaround area + Front patio

Evidence of accelerated deterioration was clearly apparent. Widespread and substantial deterioration (scaling and spalling) was noted at time of inspection. **Surface deterioration was visible in over 40 percent (40%) of the surface area. Concrete is clearly in a failure mode.**

Large, widely dispersed, thin layers of cement are peeling off the surface of the concrete in numerous locations.

Appearance of recently installed in driveway, parking/turnaround area and front patio concrete is substandard.

Surface area of deteriorated concrete is approximately 1380.00 square feet.

Please Note - Very Important

Although scaling and deterioration of this type is commonly associated with application of ice melting compounds to include salt dripping off parked cars, deterioration of this type can reasonably be prevented.

N.B. 2) Most scaling caused by freezing and thawing of concrete exposed to deicers can be prevented by entrained air incorporated in the mix in the proper amount. On driveways, sidewalks, or patios where this has not been done, scaling may occur. Even where deicing salts have not been purposely spread, they may be carried by automobiles and drip onto garage floors and driveways. Slabs may also scale when no salt has been applied if the top surface has had water applied to it during floating or troweling, has had bleed water worked into the surface during various finishing operations, or was

*floated to early. **

***This quote taken from AMERICAN CONCRETE INSTITUTE 332R-84 "Guide to Residential Cast-in-Place Concrete Construction" Reported by ACI Committee 332. Published 1984 by American Concrete Institute.**

Item **2)** above indicates that if proper "air entrainment" - defined as *the intentional incorporation of minute air bubbles in concrete to improve durability to freezing and thawing exposures or to improve workability* is achieved, then most scaling can be prevented.

A prudent workman (contractor) should request a certified copy of the mix proportions from the concrete vendor if there is any potential for failure of concrete due to bad mixture or lack of proper "entrained air."

Conclusions-

The above-referenced driveway, parking/turnaround area + front patio are in an advanced state of deterioration for their age.

The observed deterioration is excessive and evidence that common (usual and expected) standards of workmanship were not observed.

Evidence of sub-standard workmanship is clearly visible in the name deleted driveway.

Please note-

a) Older sections of concrete (to include sections closest to the street) which are commonly heavily exposed to road salt are not deteriorated. (Age of older sections of concrete not known to inspector but may be the same age as the residence.)

Please note that Name Deleted Road is a major North/South thoroughfare and is heavily salted and plowed in the winter.

b) Inspector annually examines hundreds of driveways in Northern Ohio. The vast majority of them do not display the severe, accelerated deterioration seen in the newer portions of the **name deleted** driveway.

Also please note-

The exterior of the **name deleted** residence is very neatly maintained. A driveway must not only be functional but it also must be esthetically pleasing. The driveway is the "entrance" to a person's property. In it's present condition, the **name deleted** driveway is unsightly, does not meet minimum accepted visual standards and detracts from the appearance of the **name deleted** residence.

Suggested Resolution-

Remove existing the above-referenced portions of driveway, parking/turnaround area + front patio. Replace with new, correctly installed, quality materials, (approximately 1380.00 square feet).

Estimated Cost of Suggested Resolution-

\$4830.00 Labor, Materials, Tax and Permits

Please note that latent or concealed deficiencies may exist. Only non-destructive testing was conducted. Portions of the mechanical and structural systems were not able to be fully examined. This inspection is not intended to be nor is it represented as technically exhaustive. This report is not intended to be nor is it represented as an Engineer's survey. We suggested consulting all local, state, federal or other regulatory agencies to determine if facilities are in compliance with appropriate regulations. This report does not constitute an offer to perform above suggested repairs. We do not perform contracting or repair work nor do we make referrals to those who do. Contractors set their own prices and prices among contractors vary widely. We suggest acquiring three (3) competing bids from qualified contractors before making final decisions or hiring and/or employing contractors or tradespersons.

This report prepared and respectfully submitted by,

Jim Jagger
President

photos are part of this report