

SECTION A-700. Pavement design and construction.

A. Pavement design and construction: Pavement Design and Construction shall be to the following standards:

1. Pavement thickness design: The City of Crystal Lake requires specific pavement structures to account for the different loading levels expected for each classification of roadway or parking lot. Refer to the following chart for the standard typical pavement thicknesses for the various roadway and parking lot classifications that do not require a separate administrative approval from the City Engineer.

Standard Pavement Sections - Hot Mix Asphalt (HMA) [Amended 3-1-2016 by Ord. No. 7200]									
	Major/ Minor Arterial	Major Collector		Minor Collector		Local/Alley		Parking Lots	Parking Lots - Heavy Duty
HMA Surface Course	1.5" Mix D, N70	1.5" Mix C, N50		1.5" Mix C, N50		1.5" Mix C, N50		1.5" Mix C, N50	1.5" Mix C, N50
HMA Binder Course	2.5" IL 19, N70	4.5" IL 19, N50	2.5" IL 19, N50	4" IL 19, N50	2.5" IL 19, N60	2.5" IL 19, N50	2.5" IL 19, N50	2.5" IL 19, N50	2.5" IL 19, N50
HMA Base Course	8"	—	7"	—	6"	—	4"	—	—
Aggregate Base Course (CA-6, Grade #9)	4"	12"	4"	12"	4"	12"	4"	8"	10"

Standard Pavement Sections - Portland Cement Concrete [Amended 3-1-2016 by Ord. No. 7200]					
	Major/ Minor Arterial	Major Collector	Minor Collector	Local/Alley	Parking Lot (including heavy duty)
Portland Cement Concrete, Class PV	8"	8"	6"	6"	6"
Aggregate Base Course (CA-6, Grade #9)	8"	8"	8"	4"	4"

2. Alternate pavement design: The designer also has the option, with City Engineer approval, to utilize an alternate pavement structure with a structural number that meets or exceeds the standard designs established by the Engineering Division. The following Pavement Design Chart is intended to show the minimum structural number allowable for a particular street classification and parking lots if an alternate hot mix asphalt pavement design is utilized. A higher structural number may be required for those streets in manufacturing, business, and/or office areas. **[Amended 3-1-2016 by Ord. No. 7200]**

Pavement Design Chart	
Street Classification	Minimum Structural Number (HMA)
Major/Minor Arterial	4.0
Major Collector	3.7
Minor Collector	3.5
Local/Alley	3.0
Parking Lot - Heavy Duty	2.7
Parking Lot	2.2

3. Structural coefficients: Structural numbers for any alternate designs shall be calculated using the following structural coefficients:

Common Structural Coefficients	
Structural Coefficient	Coefficient
Portland Cement Concrete	0.50
Hot Mix Asphalt Surface Course	0.40
Hot Mix Asphalt Binder Course	0.33
Bituminous Base Course	0.25
Aggregate Base Course (CA-6, Grade #9)	0.13

Structural coefficients for other materials not listed in this Ordinance must be approved by the City Engineer.

4. Final surface placement: Final hot mix asphalt surface for public or private streets may be delayed upon approval of the City Engineer to avoid premature damage of final surface course if a performance surety covering 120% of the cost for the placement of the surface course is in place and only if a bituminous aggregate mixture pavement section is utilized.
5. Asphalt seams: Asphalt seams for bituminous base course, binder, and surface layers must be staggered by one foot.
6. Minimum thickness: **[Amended 3-1-2016 by Ord. No. 7200]**

- a. Surface course thickness: The minimum thickness for hot mix asphalt surface course shall meet the latest Illinois Department of Transportation specifications.
 - b. Binder lift thickness: The minimum lift thickness for hot mix asphalt binder shall meet the latest Illinois Department of Transportation specifications.
 - c. Aggregate base course thickness: The minimum thickness for aggregate base course shall be four inches.
7. Certification of pavement improvements: The City shall require street cores to be taken and tested at random intervals before the final wearing surface is applied, to certify that construction has met City requirements. If street core samples do not meet the required pavement design standards, an additional wearing course or other remedial action will be required.
 8. Hot mix asphalt ramping: The hot mix asphalt binder course shall be ramped up to meet the top of the gutter flag and the top of all utility structures, such as sanitary sewer manholes, storm sewer inlets, valve vaults, and similar improvements. The binder course shall be ground off around the utility structures and around the gutter flag prior to placement of the final surface course. Refer to the City Standard Details in Appendix Section A-600 for additional information.
 9. Construction season: All pavement materials can be installed from April 1 to November 1, weather permitting. Any work done after November 1 shall require authorization from the City Engineer. This authorization will in no way void the contractor's and developer's required guarantee on the work done.
 10. Unstable ground: Whenever ground is encountered which, in the opinion of a soils engineer acceptable to the Engineering Division, is unstable either before preparation of detailed plans or during the construction phase of the proposed improvements, no paving for public or private streets shall be placed thereon until such unstable materials are removed in their entirety and replaced with satisfactory material which shall be adequately compacted, or the unstable material shall be adequately stabilized, all in accordance with recommendations rendered by such soils engineer and as approved by the City Engineer.