

The background features a stylized landscape with green, layered mountain peaks at the top and a bright orange ground area below. The text is centered in the orange area.

Using FDR to Reconstruct Under-Designed Housing Developments

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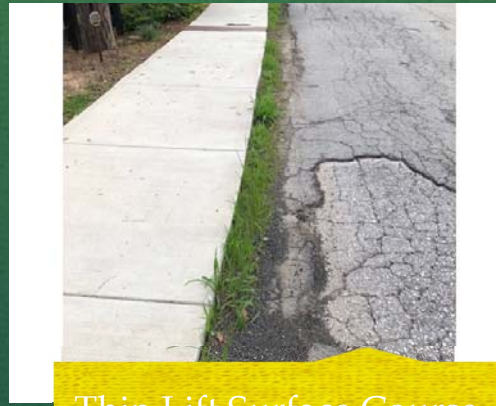
Under-Designed

- One Size Fits All Specifications by counties & municipalities
- Use of bare minimum standard by developers as cost savings
- Developments that are not completed
- Lack of oversight during construction
- Increased traffic counts and use over time

SERENBE, Georgia



Binder Course Remained
Exposed 15 years



Thin Lift Surface Course
Placed in Main Drive



Thin Lift Failure

Serenbe Testing

CORE #	Asphalt Thickness, (inc)	GAB Thickness, (inc)
1	3 ³ / ₄	5 ³ / ₄
2	3 ¹ / ₂	4 ¹ / ₂
3	2 ³ / ₈	7 ¹ / ₈
4	1 ³ / ₄	5 ¹ / ₄
5	3 ¹ / ₄	5 ³ / ₄



Mix Designs

Bulk Sample amended with 25 lbs/yd² (2.6%) Type I Portland Cement for a depth of 10 inches

Sample Identification	Dry Density, (pcf)	Moisture Content, (%)	Age, (days)	Compressive Strength, (psi)	Average Compressive Strength, (psi)
1-A	123.7	7.2	1	230	385
1-B	123.7	7.2	3	360	
1-C	125.6	6.7	7	370	
1-D	122.3	7.0	7	400	

Bulk Sample amended with 35 lbs/yd² (3.7%) Type I Portland Cement for a depth of 10 inches

Sample Identification	Dry Density, (pcf)	Moisture Content, (%)	Age, (days)	Compressive Strength, (psi)	Average Compressive Strength, (psi)
2-A	122.7	7.2	1	290	505
2-B	125.1	7.1	3	430	
2-C	124.7	6.9	7	520	
2-D	124.8	7.6	7	490	

Sample ID	Cement Content, %	Average Compressive Strength, (psi)	Amendment Rate	Mix Depth
#1	3.2	450	30 lbs/sy ²	10 inches

Serenbe Now



How to Reconstruct Using FDR Smoothly

- Geotechnical Testing- before and during construction
- Communication with homeowners, utilities, and other stakeholders
- Input from contractor
- Timing

Benefits of FDR

- Allows for full repair and replacement of substructure
- Reconstruction of roadway profile and slopes
- Reduced construction time
- Reduced construction expense
- LEED credit

Questions

