Driving Surface Aggregate
Panel Discussion

- Intro (5 min)
- Panel Input (10 min)
- Review of DSA survey (5 min)
- Questions and Discussion
Purpose:

To hear from you!

– Feedback on “DSA Clearinghouse”

– Feedback on DSA itself
  • DSA handbook in the works this winter
Why DSA?

– Early on, Program realized PA had no spec for surface aggregate, only base course (2A).

– DSA developed in ~2000, and “tweaked” several times since.

– Better longevity and resistance to erosion.
### DSA vs 2A vs 2RC:

- **2RC**: widely variable spec (road fill, pipe bedding)
- **2A**: similar to DSA, but less fine material. Designed to drain, not compact.
- **DSA**: Designed for maximum density

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**TOTAL PERCENT PASSING**
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**TOTAL PERCENT PASSING**

**Range of “fine content”**

DSA vs 2A vs 2RC:

“clean” <--------------------------> “dirty”
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#### DSA vs 2A vs 2RC:

**Range of “fine content”**

- **2RC***: 0-30%
- **2A**: 5-10%

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“clean” ← --- --- --- --- --- --- --- --- --- --- --- --- --- “dirty”
# DSA vs 2A vs 2RC:

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## Range of “fine content”

- **2RC**: Range from 0 to 30%
- **2A**: Range from 5% to 15%
- **DSA**: Range from 10% to 25%

**“clean”** <------------- > **“dirty”**

*Note: 2RC* indicates a higher concentration of fine content compared to other samples.
Why place 6” or 8” depth?

– Depth is needed to achieve maximum compaction and prevent raveling.
– Gives you something to grade in 5-10 years.

– Traditional “graveling:”
  • Place a thin lift of bad aggregate every few years when it washes away
Why plasticity?

- New to spec in 2013
- Limits the amount of clay
  - Clay = mud in spring
  - Clay = dust in summer/fall
Is DSA perfect?
– No.

Is DSA easy?
– No. There are a lot of variables: gradation, moisture, trucking, plasticity, placement, pH....
DSA Clearinghouse

– Began in 2015
– CDGRS notification and testing of DSA before placement
– Keeping database of testing results

If you are going to spend $50,000 on DSA, why not spend $200 on testing to make sure it meets spec?

Would you buy a house without a home inspection?
DSA Clearinghouse: 2015

– 22 “Known DSA suppliers” added to list in 2015
DSA Clearinghouse: 2015

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– 75 Quarry visits in 2015
DSA Clearinghouse: 2015

- 22 “Known DSA suppliers” added to list in 2015
- 75 Quarry visits in 2015
- 85 DSA samples tested in 2015

\[2 \text{ tons!}\]
DSA Clearinghouse: 2015

- 22 “Known DSA suppliers” added to list in 2015

- 75 Quarry visits in 2015

- 85 DSA samples tested in 2015
  - 46 met spec
  - 39 did NOT meet spec

only 54% passing!
DSA Clearinghouse

– How many Districts here would like to sample their own DSA in their county?
DSA Clearinghouse

– How many Districts here would like to sample their own DSA in their county?

– We will be glad to show you how.

• Saves us time
• Saves you time
• Saves money
• Demo tomorrow at lunch
• All we ask is you keep us in the loop with jobs and testing results.
Driving Surface Aggregate Panel Discussion

- Intro (5 min)
- Panel Input (10 min)
- Review of DSA survey (5 min)
- Questions and Discussion
Eric Nevel: CDGRS

Joe Quatrini: Braford CD

XXXXXXX: CD
Driving Surface Aggregate Panel Discussion

- Intro (5 min)
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DSA Survey

– September 2015
– Only to Conservation Districts
– 26 responses
Roughly how much DSA does your District have “placed or pending” on projects in 2015?

Answered: 25  Skipped: 1

- None: 3
- Less than 10,000 tons: 17
- 10,000 - 30,000 tons: 4
- Over 30,000 tons: 1
What is the average cost of paver-placed DSA for your County?

Answered: 24  Skipped: 2

- Our County does not fun... 0
- Under $20 per ton 3
- $20-$30 per ton 10
- $30-$40 per ton 8
- Over $40 per ton 3

Average ~$30 per ton
Did you find the DSA clearinghouse to be useful this year?

Answered: 26  Skipped: 0

- Very: 15
- Somewhat: 10
- No: 2
- Didn’t use: 9

Helpful: 15
Not Helpful: 2
Roughly how much DSA does your District have “placed or pending” on projects in 2015?

Answered: 25  Skipped: 1

- None: 3
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- Over 30,000 tons: 1

Did you find the DSA clearinghouse to be useful this year?

Answered: 26  Skipped: 0

- Found it very helpful: 5
- Found it somewhat: 10
- Did not find it helpful: 2
- Did not use it: 9
3 CDs did not use DSA
9 CDs did not use Clearinghouse...
...6 CDs are in big trouble!
Have you seen an improvement in DSA quality and consistency in 2015 over previous years?

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<td>Yes</td>
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<td>Unsure</td>
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Answered: 26  Skipped: 0

Nearly a complete draw
Like the option to have it available but do not feel it needs to be mandatory. Once we work with the quarries to make sure the requirements are met - that should be sufficient.

keep mandatory for 2 more years. After that it should be a recommendation. By that point Districts who were inexperienced in the past will be more knowledgeable.

having not done much with DSA placement in the past, I found this whole thing to be very frustrating for our municipal partners.

Have not received any notifications from clearinghouse

Or make one mandatory notification at the beginning of the season with all DSA projects planned and the list of quarries they will be using, and then recommend a reminder notification when the specific project date is set.

I think it is good to make sure we are getting what we pay for.

It makes sense to monitor the quality of the product for the best results - there are just too few distributors in our area - hauling it long distances becomes an issue.
All motor pavers are not created equal. We may have a segregation issue with some pavers as well. Townships are concerned about mobilization costs with small projects and using them on steep road projects and jobs that are so steep or narrow a paver can't be used. 

Best way to get a good job without separating the aggregate due to over grading (hard to find good grader operators these days).

Every project is unique leave it a local choice.

Or where it is impractical to take a paver, like narrow game commission roads.

It is very expensive and hard to find someone in our county so far.
an experienced eye with a roller gets you maximum compaction
• having done compaction testing in a previous job it is easily done but can result erroneous data based on proctor numbers being inaccurate. Nuke gauges are helpful to determine moisture percentage as much stone is outside of the optimum range. However, compaction results are often obtained in the acceptable range regardless of the moisture percentage being outside optimum.
• Even the Penndot spec. says to density check at the direction of the road owner.
How do you feel about the Program's policy of DSA as the only approved road surface?

Answered: 25  Skipped: 1

- **DSA only**: 10 comments
  - Except in high cost areas: 4 comments
  - Except in special conditions: 6 comments
- **Allow other aggregates**: 5 comments

**Total responses**: 25

- **DSA only**: 10 comments
- **DSA w/exceptions**: 10 comments
- **Allow other aggregates**: 5 comments
While not directly about DSA: Do you think the Program should eventually allow the conversion of D&G roads to tar&chip or asphalt?

Answered: 25   Skipped: 1

- **NO**: 16
- **Maybe**
  - With SCC/CDGRS approval: 2
  - With certain criteria: 6
- **Yes**: 1

Comments:

- No: 16
- Maybe: 8
- Yes: 1
Sometimes DSA is overused:

- Originally intended to be used near streams where drainage to stream was unavoidable.
- Has evolved into the “standard solution”.
- We realize it is a “carrot” for municipalities, but DSA is not required on every project.
- DSA and the spending game...
DSA is the last thing your project needs!!

All drainage issues
All base issues
All entrenchment issues

If you have the best DSA in the world, and did not address road drainage, your QAQC will not be favorable.
Plan to evaluate/discuss DSA this winter

- Advisory workgroups
- Clearinghouse
- DSA itself
- DSA Handbook
  - Clear up grey areas
  - Put all resources in one spot
Driving Surface Aggregate Panel Discussion

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Summary and Additional Discussion

LVR Environmental Impacts
Summary and Additional Discussion

Driving Surface Aggregate
Summary and Additional Discussion

Stream Crossing Policy