

## 01030.13(c) Pure Live Seed

This section provides a formula and an example calculation to obtain the correct amount of seed per acre. Using the example formula provided in this Section works well if one seed type is specified, or if the Contractor plans to mix individual seed bags in the field. However, it is common that the Contractor will provide a premixed seed blend.

The last sentence in Specification 01030.13(c) states, *“For a seed mix, make this calculation for every seed to obtain the total amount to be applied.”* The intent of this specification is to ensure that the application of a seed mix meets the minimum pounds per acre (lbs/acre) for **each** type of specified seed. The calculation example in 01030.13(d) assists in achieving this requirement. An additional example is on page 2 of this SpecNote.

Specification 01030.13(e) states, *“Furnish seed mixes that meet the labeling, quality and inspection requirements stated above.”* This Specification reiterates that every seed must meet the above inspection requirements.

Specification 01030.13(f) states, *“Seed mixes, quantities, standards, seeding rates, and other information will be included in the Special Provisions for each type of seed mix.”*

## Questions & Answers: Applying premixed seed blend

**Q** – When you run through the Pure Live Seed (PLS) calculations for every seed, why wouldn't you just add them all up to obtain the Amount (lb/acre)?

**A** – That would only work if that specific seed mix (lot or batch #) had the exact mix percentage and germination/purity rates of 100%. Seeds are perishable living things and variability is to be expected. Adding all the seeds together is a common misconception and would

likely not be applying some or all seed species at the specified application rate. The example on page 2 helps demonstrate why this does not meet the Specification. If you total the Amount (lb/acre), you will get a total of 9.1 lb/acre. By running the extra calculation, you will find that the pre-blended seed mix needs to be applied at 15.1 lb/acre to satisfy the Spec requirement for California brome, and is the controlling factor for this specific seed mix/lot #. If the seed is applied at 9.1 lb/acre, then the California Brome would be out of specification by 6 lb/acre.

**Q** – Some seed mixes have a large variety of individual seed types with different percentages for each of them. Is there an easier way to calculate this?

**A** – Yes, ODOT has a new form called “Premixed Seed Blends, Adjusted Rates of Application” (form 734-5180) that will calculate the amount of seed mix to apply. The required inputs for the form are the specified application rate for each seed type, purity, germination, and percent of seed for that lot #. After you pre-measure the acreage (**always pre-measure, don't go off the plan measurement!**) then you can enter that to see how many pounds you will need for that seed mix lot/batch number. If there are changes to batch/lot number and/or seed mix, you will need to fill out a new form.

### Note:

The PLS calculations were formulated when ODOT used only grass seeds on roadsides. Now native seeds and wildflower seeds are often included. Some of these seeds are by nature “dirty” or they germinate the second year (which would not be identified in testing). If a seed has very low purity and germination rates that skew the calculations beyond what is reasonable, contact the POR to discuss providing that one seed at a weight independent of the PLS calculations. The POR's approval will be needed.



## Seeding Example

Use the Directions, Permanent Seeding (as you would find in section 01030.13(f)) and the Permanent Seed Tag (Lot# 28167840) below to calculate the actual application rate where the shorted seed type is applied at the specified rate, so that all seeds meet or exceed the specified amount per acre.



### Directions:

1. Using the permanent seed tag for the pre-blended mix, Lot# 28167840, fill in the "Purity" and "Germination" blanks. Then, calculate the "Amount" respectively.
2. Using the seed tag, determine the weight of each seed species in the 25 lb. bag.  
**Example:** Sheep Fescue is 6.5% x 25 lb. = 1.625 lb. of Sheep Fescue in this 25 lb. bag
3. Use this information to find out how much Sheep Fescue is in 1 lb. for this pre-blended mix.  
 1.625 lb. Sheep Fescue ÷ 25 lb. bag = 0.065 lb. of Sheep Fescue per 1 lb. of the pre-blended mix.  
**Note:** You can bypass the logical sequence in steps 2 & 3, by moving the decimal two spaces to the left.  
**Example:** Canada Wildrye 52.9% per 25 lb. bag = 0.529lb of Canada Wildrye per 1 lb. of this 25 lb. bag.
4. To determine how much of the pre-blended seed mix is needed to provide the specified weight of Sheep Fescue, divide the "Amount" of Sheep Fescue by the weight of Sheep Fescue in 1 lb. of the pre-blended mix.  
**Example:** 0.6 ÷ 0.065 lb. = 9.2 lb. per acre
5. Do this for each seed in this pre-blended mix. Determine the highest rate and apply this seed mix at this rate.

### Permanent Seeding

Name (Common Name)	PLS (lb/acre)	÷	(% Purity (minimum))	x	(% Germination) (minimum)	=	Amount (lb/acre)
Festuca ovina (Sheep Fescue)	<u>0.5</u>		<u>.88</u>		<u>.90</u>		<u>0.6 / 0.065 = 9.2</u>
Elymus canadensis (Canada Wildrye)	<u>2</u>		<u>.90</u>		<u>.90</u>		<u>2.5 / 0.529 = 4.7</u>
Bromus marginatus (California Brome)	<u>5</u>		<u>.85</u>		<u>.98</u>		<u>6.0 / 0.397 = 15.1</u>

<b>Permanent Seed Tag</b>				
Lot# XX-YY-ZZ				
<u>Contains</u>	<u>Pure Seed</u>	<u>Purity</u>	<u>Germ</u>	<u>Origin</u>
Sheep Fescue	6.5%	88%	90%	OR
Canada Wildrye	52.98%	90%	90%	OR
California Brome	39.77%	85%	98%	OR
Other Crop Seeds	0.25%			
Inert Matter	0.25%			
Weed Seeds	0.25%			
				Net Wt.: 25 lb.

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