



Australian Government

PMAOPS350 Match and adjust colour

Release: 1

PMAOPS350 Match and adjust colour

Modification History

Release 1. Supersedes and is equivalent to PMAOPS350B Match and adjust colour

Application

This unit of competency covers the skills and knowledge required to recommend adjustments to bring product colour into the acceptable range using a mixture of colourants. It applies to products, such as:

- paint
- ink
- concrete
- rubber
- plastic
- dye mixes/dyed materials.

Any suitable colourants, such as those below may be used:

- pigments
- dyes
- masterbatches
- tinters.

This unit of competency applies to technicians who are required to apply a significant understanding of colour to prepare colour samples, compare the sample to the standard, and estimate colourant additions needed to bring the batch to standard. The comparison may be done using a 'colour computer' or by eye.

This unit of competency is typically performed by technicians working independently while in liaison with operators, paint/industrial chemists or other personnel.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Operations

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Prepare colour sample	1.1	Identify required sample properties
		1.2	Select sample preparation method
		1.3	Identify required sample preparation conditions
		1.4	Adjust and control sample preparation conditions
		1.5	Prepare colour sample
2	Compare colour sample to standard in accordance with procedures	2.1	Identify light conditions for comparison
		2.2	Compare colour sample to standard using 'colour computer' and/or by eye
		2.3	Reconcile data from comparison
3	Recommend adjustments to batch	3.1	Estimate the colourant additions needed to bring batch to standard
		3.2	Recommend additions to relevant personnel
		3.3	Recommend additional mixing/processing requirements to procedure
		3.4	Repeat sample preparation, colour matching and adjustment until correct colour is obtained

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used, and include one or more of the following:

- legislative requirements, including work health and safety (WHS)
- industry codes of practice and guidelines
- environmental regulations and guidelines
- Australian and other standards
- licence and certification requirements

All operations to which this unit applies are subject to stringent health, safety and environment (HSE) requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Hazards Hazards include one or more of the following:

- electricity
- equipment failures
- industrial (machinery, equipment and product)
- noise, rotational equipment or vibration
- plant services (steam, condensate and cooling water)
- limited head spaces or overhangs
- flammability and explosivity
- hazardous products and materials
- unauthorised personnel
- slippery surfaces, spills or leaks
- other hazards that might arise

Procedures All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, include one or more of the following:

- work instructions
- standard operating procedures (SOPs)

- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant

Unit Mapping Information

Release 1. Supersedes and is equivalent to PMAOPS350B Match and adjust colour

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875>

Assessment Requirements for PMAOPS350 Match and adjust colour

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria, and include the ability to:

- control sample preparation conditions, including one or more of:
 - temperature
 - drying rate
 - time
 - pressure
 - volume
- discriminate differences in hue, value and chroma (or colour/tone, lightness/shade and saturation)
- recognise colourant addition and colourant dispersion differences
- make judgements based on:
 - perceptibility
 - acceptability/tolerance
 - grade 1, 2 or 3 match as required by specification
- interpolate and extrapolate data
- calculate required adjustments consistent with the colour match data
- recommend adjustments that avoid overshooting and minimise the number of adjustments to bring the batch into specification.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- types and application of sample preparation methods, such as:
 - draw down
 - spraying
 - brushing
 - moulding
 - casting
 - milling
 - pressing

- the impact of sample properties, including surface finish, gloss, thickness, opacity, substrate properties on sample preparation methods and conditions
- the effect of a change of light conditions on the appearance of the colour for the pigment combination used as relevant to the product
- the impact of opacity on colour as relevant to the product
- types and application of colourants relevant to the application.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operations
 - will typically include a supervisor/third-party report focusing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include the adjustment of a commercial scale batch and equipment to meet a suitable colour standard
 - may use industry-based simulation for part of the unit particularly where safety, lack of opportunity or significant cost is an issue.
- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment in a simulated environment should use evidence collected from one or more of:
 - walk-throughs
 - pilot plant operation
 - demonstration of skills
 - industry-based case studies/scenarios
 - ‘what ifs’.
- Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.

- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- In addition, the assessor or anyone acting in subject matter expert role in assessment must demonstrate both technical competency and currency. If the assessor cannot demonstrate technical competency and currency they must assess with a subject matter expert who does meet these requirements.
- Technical competence can be demonstrated through one or more of:
 - relevant VET or other qualification/Statement of Attainment
 - appropriate workplace experience undertaking the type of work being assessed under routine and non-routine conditions
 - appropriate workplace experience supervising/evaluating the type of work being assessed under routine and non-routine conditions
- Currency can be demonstrated through one or more of:
 - being currently employed undertaking the type of work being assessed
 - being employed by the organisation undertaking the type of work being assessed and having maintained currency in accordance with that organisation's policies and procedures
 - having consulted/had contact with an organisation undertaking the type of work being assessed within the last twelve months, the consultation/contact being related to assessment
 - conducting on-the-job training/assessments of the type of work being assessed
 - being an active member of a relevant professional body and participating in activities relevant to the assessment of this type of work.

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